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CLIFFORD B. CONNELLEY

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FOREWORD

This is the first of a series of bulletins to be issued by the Bureau of Mediation and Arbitration, Department of Labor and Industry, Commonwealth of Pennsylvania, endeavoring to place before the public a graphic review of industrial conditions within the State. While the figures for 1917 and 1918 were gathered under abnormal conditions, they show forcibly the need for better and closer co-operation.

In 1916, before this country went into the war actively, there were 316 strikes. In 1918, when every effort was made to keep the wheels of industry turning, 317 strikes occurred. With virtually the same number of industrial disputes in each year, the chart showing the duration of strikes indicates that in 1916 the average length of each strike was 49 days as compared with 10 days in 1918.

If, due to the war emergency, any mistakes in decisions were made, then the duty during peace times is to train the conciliatory bureaus so that they will be better fitted to cope with industrial problems. But the outstanding feature is that due to the urgent need of co-operation, it was possible to arrive at a settlement in virtually one-fifth of the time required two years prior.

A comparative study of the years 1918 and 1919 shows that the strikes in the textile industry increased from 31 to 114, in the tobacco industry, from 1 to 37. These are generally conceded to be industries paying wages slightly below the average. In 1919, these two industries alone made up practically thirty per cent. of the total number of strikes in the State and are greatly responsible for the apparent inconsistency between the number of days lost and wages lost in the last two years.

Owing to the fact that the general "steel" and "coal" strikes were handled entirely by the Federal Government and that it would have required the holding up of this issue for a considerable length of time in order to gather the statistics throughout the entire State, these items have been omitted.

THE BUREAU OF MEDIATION AND ARBITRATION.

An Address Delivered Before the Pennsylvania Safety Congress, at Harrisburg, Pa., March 24, 1920.

By WILLIAM J. TRACY, Chief.

"Blessed are the peacemakers!"

This very excellent motto for our bureau was bestowed on us nearly 1900 years ago in the Sermon on the Mount.

With such a fine motto, of divine origin, indeed, it was a foregone conclusion, of course, that in due course of time we would get a bureau, too, to go with the motto. So in the fullness of time, a mere matter of some 1883 years after we got our motto, we got our bureau.

Under Act 267, Sections 17, 18 and 19, of June 2nd, 1913, the Act creating the Pennsylvania Department of Labor and Industry, a Bureau of Mediation and Arbitration was established in this department. This bureau is composed of a chief, a secretary, five mediators and one investigator, the official Pennsylvania peacemakers to be blessed or otherwise according to each individual's personal attitude towards the Sermon on the Mount.

We are aware, of course, that some people don't believe in the practical possibility of this sermon. They argue that the sermon is all right as a sermon but that in this cold, cruel, practical business world, the peacemakers will have a tough time of it and get the worst of any fight they try to stop.

But the public long ago has realized that it gets the worst of any industrial fight that isn't stopped and that is why the public at last, through its representatives in the legislature, has granted state authority to our industrial peacemakers.

And while these industrial peacemakers of our Bureau of Mediation and Arbitration may not earn the immediate blessings of either side to any industrial dispute, they feel sure at least of the blessings from the general public.

Then, in time, if not before, surely within another 1883 years, we hope also to win the blessings of the industrial disputants when they realize that, after all, every fight is fought only for a settlement; that no matter how well, how long or how bitterly they fight, ultimately they must get together and agree on some working basis, and, therefore, if ultimately they must get together, why not get together before, instead of after the expensive, ruinous fighting?

The law and department rules governing the operation of the official peacemakers of the Pennsylvania Bureau of Mediation and Arbitration provide that wherever a dispute arises between an employer and his employes which cannot readily be adjusted between themselves, the chief of the Bureau of Mediation and Arbitration shall promptly proceed to the location of the dispute and endeavor by mediation to effect an amicable settlement of the controversy. If such a settlement cannot be effected, the dispute may be arbitrated by a board composed of one person selected by the employer, one person selected by the employes and a third person selected by the first two chosen arbitrators. This third member of the arbitration board shall be selected within five days after the dispute has been submitted for arbitration. If no third member is selected within this five-day period, the chief of the Bureau of Mediation and Arbitration shall act as a third member of the arbitration board and be its chairman.

The dispute in arbitration shall be submitted in writing to the arbitration board, together with an agreement binding both parties to the dispute to abide by the decision of the arbitration board. The decision of the arbitration board shall be rendered within ten days after the completion of its investigation and copies shall be filed with the Bureau of Mediation and Arbitration and with both parties to the controversy.

The Commissioner of the Department of Labor and Industry from time to time assigns such assistance to the Bureau of Mediation and Arbitration as he deems necessary to meet the requirements of the Bureau. The Bureau of Factory Inspection, for instance, is in a position to greatly aid the Bureau of Mediation and Arbitration through the co-operation of its factory inspectors. These inspectors keep constantly in touch with conditions in their respective localities and frequently are in the best possible position to explain the peculiar attitude of either or both sides to an industrial controversy. These inspectors also are in a position to keep the Bureau of Mediation and Arbitration fully informed about any new disputes arising between employers and employes.

The Bureau of Mediation and Arbitration is also aided by the co-operation of the Bureau of Employment, which is estopped by law from furnishing employment to men at points where industrial disputes are unsettled.

This co-operation between the various bureaus in the Pennsylvania Department of Labor and Industry, makes for speed, and speed, of course, is an essential element in settling disputes. It is a well-known fact that the longer a fight goes on, the harder it is to settle.

If the Bureau of Mediation and Arbitration were never notified until after strikes or lock-outs had been put into effect, many avenues

of mediation would be closed. But when a state mediator arrives at the scene of trouble before real hostilities have started, settlement can often be effected with great saving in both money and time to the parties directly interested and to the general public.

That there is ample room for such peacemaking activities may be illustrated by the following statistics. The number of strikes in Pennsylvania during the last four years were:

1916, 316; 1917, 498; 1918, 317; 1919, 484.

The total number of strikes for the four years, 1,615.

The most notable changes in 1919 as compared with 1918, are the increase in the number of strikes in the textile industry from 31 to 114, in the tobacco industry from 1 to 37 and in the miscellaneous trades from 8 to 40. These strike increases are in those industries which employ a great many women workers at less pay than received by men.

The number of working days lost through these disputes during the last four years is:

1916, 3,574,860 days; 1917, 1,431,328 days; 1918, 507,937 days; 1919, 4,665,118 days.

The total number of days lost, 10,179,243.

The amount of wages lost is reported as:

1916, $7,184,296; 1917, $4,694,769; 1918, $2,212,304; 1919, $13,943,502.

The total amount of wages lost for the four years, $28,034,871.

The average duration of strikes during these four years was:

1916, 49 days; 1917, 26 days; 1918, 10 days; 1919, 26 days.

These figures do not include wages lost nor number of days lost in the coal or the steel strike.

The wonderful improvement in conditions shown by the figures of 1917 and 1918 as compared with other years, is due largely to war conditions, of course, but they are highly significant as demonstrating what can be accomplished by such patriotic co-operation as was possible when both employers and employes realized that production had to be maintained at any cost to beat the common foe.

Now, if for the common external foe of militarism, we substitute the common internal foe of wasteful fighting, can we not with a little co-operation and common sense obtain the same happy results in times of peace as we did under the pressure of war?

This is not merely a plea for settling annoying quarrels or avoiding useless enmities. It is a plea for protecting thousands of working families against useless privations. It is a plea for preventing wanton waste of earnings and production powers which add to the cost of living. It is a plea for the patriotic conservation of our industrial resources and efficiency so that our country may be fit and able to compete in the world markets. It is a plea for plain American

common sense in getting together for the common good, rather than rattling sabres every time we disagree.

If we can accomplish this, and the war figures show that we can if we honestly and patriotically try, and if we of the Bureau of Mediation and Arbitration may contribute our share towards this happy accomplishment, we shall feel that, indeed, "Blessed are the peacemakers!"

KIND OF BUSINESS.

1. Building and Contracting,
2. Chemicals and Allied Products,
3. Clay, Glass and Stone Products,
4. Clothing Manufacture,
5. Food and Kindred Products,
6. Leather and Rubber Goods,
7. Liquors and Beverages,
8. Lumber and its Remanufacture,
9. Paper and Printing Industries,
10. Textiles,
11. Laundries,
12. Metals and Metal Products,
13. Mines and Quarries,
14. Public Service,
15. Tobacco and its Products,
16. Unclassified Industries,
17. Mercantile Establishments,
18. Apartment, Lodging and Boarding Houses,
19. Churches,
20. Hospitals,
21. Hotels and Restaurants,
22. Public Halls and Lodge Rooms,
23. Schools and Colleges,
24. Office Buildings,
25. Theatres and Motion Picture Theatres,
50. Buildings other than above.

NOTE: For explanation of above see printed list of industries.

The Industries Specified in the Accompanying Tables, Together with Their Sub-Divisions, are as Follows:

BUILDING AND CONTRACTING.

(1)

Brick, Cement and Stone Work.
Building Construction.
Electrical Construction.
Painting and Decorating.
Paving and Road Construction.
Plumbing and Heating.
Railway Construction.
Roofing and Sheet Metal Work.
Structural Iron Work (Erecting).
Others of this class.

CHEMICALS AND ALLIED PRODUCTS.

(2)

Alcohol.
Charcoal
Chemicals
Cleansing and polishing preparations.
Dyestuffs and Extracts.
Fertilizers.
Fireworks
Flavoring preparations.
Glue and Gelatin.
Graphite and Graphite refining.
Grease and Tallow.
Ink—Printing.
Ink—Writing.
Malt and Yeast.
Matches.
Mucilage and Paste.
Oils—Crude.
Oils—Essential.
Oils—Linseed.
Oils—Lubricating.
Oils—Refined, Kerosene, &c.
Oils—Not specified.
Paints and Varnishes.
Patent and Proprietary Medicines.
Powder and other explosives.
Soap.
Sulphuric, Nitric and mixed acids.
Tar.
Toilet preparations.
Turpentine and Rosin.
Wood Alcohol and Acetate of Lime.
Others of this class.

CLAY, GLASS AND STONE PRODUCTS.

(3)

Artificial Stone.
Brick.
Cement.
Crucibles.
Emery and other abrasive wheels
Glass bottles.
Glass—cut.
Glass—decorative.
Glass—plate
Glass—table ware.
Glass—window.
Grindstones.
Hones and whetstones.
Lamps and chimneys.
Lime.
Mantels and Tile.
Marble and granite work.
Mirrors.
Paving materials.
Pottery, terra cotta and fire clay products.
Wall plaster.
Others of this class.

CLOTHING MANUFACTURE.

(4)

Clothing—men's.
Clothing—womens' and children's.
Corsets.
Fur Goods.
Furnishing goods—not specified.
Gloves—other than leather.
Hats and Caps—other than straw.
Hats—straw.
Hosiery and knit goods.
Ladies skirts.
Millinery.
Neckwear.
Overalls.
Shirts.
Shirt Waists.
Suspenders.
Underwear.
Others of this class.

FOOD AND KINDRED PRODUCTS.

(5)

Baking Powder.
Bread and other bakery products.
Butter, Cheese and condensed milk.
Canned and preserved goods.
Chocolate and cocoa products.
Coffee and spices, roasting, &c.
Confectionery.
Cordials and syrups.
Flour and grist mill products.
Ice Cream.
Glucose and Starch.
Ice.
Molasses.
Slaughtering and meat packing.
Sugar refining.
Vinegar and Cider.
Others of this class.

LEATHER AND RUBBER GOODS.

(6)

Belting and Hose.
Boots and shoes.
Boots and shoes—rubber.
Gloves—leather.
Hides and Skins.
Leather—sole.
Leather—tanned, curried and finished.
Leather goods.
Rubber goods—not specified.
Trunks and suit cases.
Others of this class.

LIQUORS AND BEVERAGES.

(7)

Carbonated beverages.
Liquors—distilled.
Liquors—malt.
Liquors—vinous.
Table Waters.
Others of this class.

LUMBER AND ITS REMANUFACTURE.

(8)

Barrels, kegs, and tanks.
Beds and cots.
Billiard tables and supplies.
Bobbins and spools.
Boxes—cigar
Boxes—packing.
Carriages, wagons and parts.
Children's carriages, sleds, &c.
Cooperage, etc.
Furniture.
Lasts.
Lumber and timber products.
Models and patterns—not paper.
Planing mill products.
Refrigerators and ice boxes.
Washing machines and wringers.
Wood—turned and carved.
Wood novelties.
Others of this class.

PAPER AND PRINTING INDUSTRIES.

(9)

Bags—paper.
Boxes—fancy and paper.
Card cutting and designing.
Electroplating, Engraving and Dyesinking.
Labels and tags.
Paper goods—not specified.
Photo Engraving.
Printing and Publishing.
Pulp goods.
Roofing Paper.
Sand and Emery paper, and cloth.
Stationery goods—not specified.
Stereotyping and electrotyping.
Wall paper.
Others of this class.

TEXTILES.

(10)

Bags—other than paper.
Blankets, Flannels, etc.
Braids, Tapes and Bindings.
Carpets and rugs.
Cordage and twine, jute and linen goods.
Cotton goods.
Curtains.
Dyeing and finishing textiles.
Haircloth.
Hammocks.
Handkerchiefs and Embroideries.
Horse Blankets and robes.
Shoddy.

Silk and Silk Goods and throwsters.
Thread.
Towels.
Waste.
Wool pulling.
Woolen, worsted and felt goods.
Yarns.
Others of this class.

LAUNDRIES.

(11)

Laundry Work.
Others of this class.

METALS AND METAL PRODUCTS.

(12)

Agricultural Implements and Machinery.
Aluminum and its products.
Automobiles and parts.
Axes and edge tools.
Axles.
Babbit metal and solder.
Bars—lead and lead sheets.
Bars—iron and steel.
Beds and bed springs.
Bicycles, motorcycles and parts.
Billets, blooms and slabs.
Boilers, tanks and stacks.
Bolts, nuts and rivets.
Brass and bronze products.
Cars and car wheels.
Castings—iron and steel.
Chains.
Cornices, ceilings, ventilators, etc.
Cutlery.
Elevators and Hoists.
Engines—gas and gasoline.
Engines—railroad.
Engines—stationary.
Engines—traction.
Ferro alloys.
Files.
Fire escapes.
Fire arms and ammunition.
Fixtures—gas and electric, lamps and reflectors.
Forgings—Iron and steel.
Frogs and switches.
Hardware and specialties.
Hoops, bands and cotton ties.
Horse shoes.
Ingots—Iron and steel.
Iron—charcoal.
Iron—pig.
Iron and steel work—ornamental.
Instruments — professional and scientific.
Machinery and parts.
Machine Repair shops.
Machine tools.
Meters.
Motors, dynamos, generators, etc.
Nails and spikes.
Needles, pins, hooks and eyes.
Piling—rolled sheet.
Pipes and tubing.
Plates—iron and steel.
Plumber's supplies and steam fittings.
Pulleys, hangers and bearings.
Pumps and valves.
Rails—iron and steel.
Radiators.
Railroad supplies.
Rods—steel, in coils.
Safes, vaults and locks.
Saws.
Scales.
Scrap iron and steel.
Shafting—cold rolled, drawn and turned.
Shapes—structural.
Shapes—other iron and steel.
Sheets.
Shovels, scoops and spades.
Silverware and plated ware.
Smelting and refining.
Springs.
Stoves, heaters and ranges.
Supplies—electrical.
Tin and Terne plate.
Tinner's and Roofer's supplies.
Typefounding.
Typewriters.
Ware—tin and stamped.
Ware—enamel and galvanized.
Watches, clocks, jewelry, etc.
Wire products.
Garages making repairs.
Others of this class.

MINES AND QUARRIES.

(13)

Clay.
Ore—iron.
Sand and Gravel.
Slate—roofing.
Slate—other than roofing.
Stone.
Stone—cut.
Stone—crushed.
Coal—anthracite.
Coal—bituminous.
Others of this class.

PUBLIC SERVICE.

(14)

Repair shops.
Auto Transit Companies.
Canal and Navigation Companies.
Electric Light, Heat and Power Companies.
Ferry Companies.
Gas Companies.
Gas Companies (Natural).
Gas and Electric Companies.
Inclined Plane Companies.
Pipe Line Companies.
Municipal Sewage Treatment Works.
Steam Heating Companies.
Steam Railroads.
Electric Railway Companies.
Telephone Companies.
Toll Bridge Companies.
Turnpike Companies.
Water Companies.
Others of this Class.

TOBACCO AND ITS PRODUCTS.

(15)

Cheroots and stogies.
Chewing tobacco.
Cigars.
Cigarettes.
Smoking tobacco.
Others of this class.

MISCELLANEOUS.

(16)

Artificial flowers, feathers and plumes.
Awnings, tents and sails.
Asbestos products.
Baskets, rattan and willow ware.
Brooms.
Brushes.
Buttons.
Caskets and Undertakers' supplies.
Coke.
Cork cutting.
Curled hair.
Engineering service.
Fancy articles and specialties.
Flags, banners, regalia, emblems, etc.
Fuel—manufactured.
Gold and silver leaf, and foil.
Hair work.
Handstamps, stencils and brands.
House furnishing goods—not specified.
Junk—paper, rags, etc.
Laboratory service.
Mats and matting.
Mattresses and bedding.
Musical instruments—not specified.
Nursery products.
Oil cloth and linoleum.
Optical goods.
Packing—Steam, etc.
Pens and pencils.
Photographic apparatus and supplies.
Pianos and organs.
Pipes—tobacco.
Plants and flowers.
Signs.
Ship and boat building.
Soda water apparatus.
Sporting and athletic goods.
Statuary and art goods.
Surgical appliances and artificial limbs.
Teeth.
Toys and games.
Umbrellas and parasols.
Upholstering
Wheelbarrows.
Window shades and fixtures.
Oil well supplies.
Others of this class.

REPORT OF THE BUREAU OF MEDIATION AND ARBITRATION FOR THE YEAR 1916.

REPORT OF THE BUREAU OF MEDIATION AND ARBITRATION FOR THE YEAR 1916.

Industry.	Strikes Reported During the Year.						Strikes in Which Department Mediators Acted.						Total Estimated Loss.	
	Total number.	Employes involved.	Settled.	Employes involved.	Pending.	Employes involved.	Total number.	Employes involved.	Settled.	Employes involved.	Pending.	Employes involved.	Days lost.	Wages lost.
Building trades,	4	1,300	4	1,300			2	1,100	2	1,100			16,200	$20,700
Oil manufacturing,	4	1,888	4	1,888			2	388	2	388			21,400	48,800
Glass,	15	933	15	933			5	491	5	491			11,938	32,054
Garments,	2	935	2	935			1	400	1	400			36,000	100,000
Foods,	2	220	2	220									210	800
Leather,	2	507	2	507			1	275	1	275			4,331	10,000
Lumber,	2	400	2	400			1	50	1	50			1,600	4,200
Textiles,	23	4,755	23	4,755			3	437	3	437			69,419	77,782
Metal,	143	69,901	129	68,423	14	1,478	103	53,093	91	51,815	12	1,278	1,325,439	2,514,680
Mining,	97	48,055	93	47,183	4	872	76	42,911	74	42,489	2	422	1,815,808	4,655,730
Public service,	6	4,952	6	4,952			3	4,232	3	4,232			35,476	90,200
Tobacco,	5	1,461	5	1,461			1	350	1	350			148,866	103,900
Unclassified,	8	2,671	8	2,671			2	154	2	154			82,953	145,150
Hotels,	3	174	3	174									5,220	10,300
Total,	316	138,152	298	135,802	18	2,350	200	103,881	186	102,181	14	1,700	3,574,860	$7,814,296
Allegheny,	72	76,917	71	76,817	1	100	41	63,997	41	63,997			1,808,532	$3,559,340
Armstrong,	9	1,313	9	1,313			8	1,238	8	1,238			310,980	891,900
Beaver,	9	3,002	9	3,002			8	1,802	8	1,802			117,620	350,950
Bedford,	7	910	7	910			4	395	4	395			32,915	39,945
Berks,	2	54	2	54			1	23	1	23			788	1,865
Blair,	1	14	1	14									14	8
Butler,	1	65	1	65			1	65	1	65			16,380	5,000
Cambria,	11	1,993	11	1,993			7	1,058	7	1,058			131,656	354,750

Cameron,	1	900	1	900									12,600	30,000
Carbon,	1	125	1	125									3,125	4,687
Centre,	12	1,312	11	1,012	1	300	12	1,312	11	1,012	1	300	9,543	27,988
Clearfield,	30	6,900	29	6,778	1	122	26	6,486	25	6,364	1	122	53,957	159,205
Dauphin,	1	300	1	300			1	300	1	300			9,000	23,000
Delaware,	3	8,448	3	8,448			2	8,428	2	8,428			12,000	20,000
Elk,	4	514	4	514			4	514	4	514			5,293	12,400
Erie,	2	1,144	2	1,144									5,664	26,500
Huntingdon,	3	1,150	3	1,150			1	125	1	125			39,150	12,100
Indiana,	9	1,287	9	1,287			8	937	8	937			154,860	413,020
Jefferson,	3	4,162	3	4,162			3	4,162	3	4,162			43,582	99,200
Lackawanna,	1	300	1	300			1	300	1	300			1,800	3,500
Lancaster,	2	400	2	400									1,800	350
Lawrence,	2	1,059	2	1,059									43,540	76,000
Lehigh,	5	922	5	922			2	415	2	415			17,189	36,030
McKean,	17	982	17	982			16	907	16	907			76,663	238,200
Mercer,	2	768	2	768									2,436	6,000
Montgomery,	7	1,377	3	848	4	529	5	539	1	10	4	529	3,456	9,859
Northampton,	4	952	4	952									12,318	22,800
Northumberland,	1	1,667	1	1,667									15,003	25,000
Philadelphia,	72	13,555	64	12,721	8	834	38	7,321	31	6,637	7	684	319,333	519,800
Somerset,	7	1,295	6	995	1	300							137,764	358,872
Venango,	5	367	4	302	1	65	5	367	4	302	1	65	7,523	17,890
Washington,	2	1,000	2	1,000			1	400	1	400			8,000	23,600
Westmoreland,	5	2,690	4	2,590	1	100	4	2,590	4	2,590			157,900	443,000
York,	3	308	3	308			1	200	1	200			2,476	3,300
Total,	316	138,152	298	135,802	18	2,350	200	103,881	186	102,181	14	1,700	3,574,860	$7,814,296

Industry.	Strikes Reported During the Year.						Strikes in Which Department Mediators Acted.						Total Estimated Loss.	
	Total number.	Employes involved.	Settled.	Employes involved.	Pending.	Employes involved.	Total number.	Employes involved.	Settled.	Employes involved.	Pending.	Employes involved.	Days lost.	Wages lost.
Building trades,	22	8,246	20	8,246	2	1,400	5	4,700	4	4,700	1	----------	61,909	$203,195
Chemicals,	2	590	2	590	----------	----------	2	590	2	590	----------	----------	7,460	16,500
Glass,	18	3,338	17	3,338	1	----------	3	832	3	832	----------	----------	21,801	49,025
Clothing,	33	4,790	32	4,790	1	----------	15	1,713	15	1,713	----------	----------	156,796	205,455
Food,	14	2,759	14	2,759	----------	----------	12	2,673	12	2,673	----------	----------	138,931	379,715
Leather,	3	995	2	915	1	80	2	980	1	900	1	80	4,515	13,516
Liquors,	3	515	3	515	----------	----------	1	55	1	55	----------	----------	9,715	22,110
Lumber,	5	132	5	132	----------	----------	2	72	2	72	----------	----------	1,276	3,344
Paper,	2	325	2	325	----------	----------	2	325	2	325	----------	----------	1,625	700
Textiles,	128	14,479	65	10,321	63	4,154	94	9,128	32	4,974	62	4,154	289,977	662,451
Metal,	101	21,527	97	21,299	4	228	50	14,075	49	13,955	1	120	270,277	1,181,269
Mines,	92	32,745	88	31,574	4	1,171	45	12,597	43	12,240	2	357	317,389	976,456
Public service,	40	6,284	36	6,279	4	5	13	3,528	13	3,528	----------	----------	119,518	300,326
Tobacco,	5	394	5	394	----------	----------	1	109	1	109	----------	----------	1,454	10,381
Miscellaneous,	20	3,985	17	3,985	3	----------	6	685	3	685	3	----------	23,063	55,000
Mercantile,	2	228	2	228	----------	----------	1	210	1	210	----------	----------	5,010	15,600
Hotels,	8	326	3	127	5	199	5	199	----------	----------	5	199	612	1,825
Total,	498	101,658	410	95,817	88	7,241	259	52,471	184	47,561	75	4,910	1,431,328	$4,094,769
Allegheny,	45	9,545	35	9,238	10	307	30	8,585	25	8,386	5	199	95,487	$296,217
Armstrong,	2	600	2	600	----------	----------	----------	----------	----------	----------	----------	----------	4,000	10,300
Beaver,	10	3,833	10	3,833	----------	----------	9	3,778	9	3,778	----------	----------	122,686	487,723
Bedford,	2	291	2	291	----------	----------	1	200	1	200	----------	----------	4,402	17,000
Berks,	6	1,295	6	1,295	----------	----------	1	109	1	109	----------	----------	4,209	133,854

Bucks,	1	42	1	42									210	400
Butler,	1	36	1	36			1	36	1	36			612	1,652
Cambria,	40	9,539	40	9,539			31	8,093	31	8,093			165,738	456,545
Carbon,	3	1,161	3	1,161			1	265	1	265			3,617	13,175
Chester,	2	17	2	17			1	17	1	17			306	900
Clearfield,	18	3,176	15	2,739	3	437	16	2,176	13	1,739	3	437	43,507	153,320
Clinton,	1	300	1	300			1	300	1	300			18,300	50,000
Columbia,	3	1,646	3	1,646			2	1,630	2	1,630			6,828	75,744
Dauphin,	2	1,009	2	1,009									10,054	30,200
Delaware,	15	3,830	15	3,830			2	192	2	192			16,756	63,263
Erie,	5	667	5	667									12,947	39,160
Fayette,	5	535	5	535			1	12	1	12			2,869	4,662
Indiana,	1	200	1	200									600	1,800
Jefferson,	4	546	4	546			2	270	2	270			9,476	20,890
Lackawanna,	16	4,732	15	4,732	1		2	2,250	2	2,250			49,230	108,343
Lancaster,	5	154	5	154			5	154	5	154			1,579	4,509
Lawrence,	3	1,375	3	1,375			2	875	2	875			5,625	16,725
Lebanon,	6	266	6	266			4	200	4	200			1,512	7,530
Lehigh,	10	1,433	10	1,433			1	624	1	624			2,848	5,364
Luzerne,	38	12,778	35	12,759	3	19	6	2,087	6	2,087			103,534	171,618
Lycoming,	1	25	1	25			1	25	1	25			1,850	4,500
McKean,	4	96	4	96									268	1,108
Mercer,	4	900	4	900			1	250	1	250			11,650	49,450
Montgomery,	15	3,310	15	3,310			3	470	3	470			21,586	35,247
Montour,	5	620	5	620			4	370	4	370			22,032	123,431
Northampton,	10	946	10	946			1	52	1	52			7,694	27,141
Northumberland,	8	4,870	7	4,070	1	800	3	2,700	3	2,700			33,400	102,180
Perry,	1	250	1	250									3,750	11,000
Philadelphia,	161	17,125	91	12,847	70	5,678	112	10,355	45	6,081	67	4,274	520,859	1,211,227
Schuylkill,	12	3,733	12	3,733			3	458	3	458			28,409	96,460
Somerset,	1	180	1	180									360	1,200
Tioga,	1	450	1	450			1	450	1	450			19,800	60,000
Venango,	3	547	3	547			3	547	3	547			8,916	24,348
Washington,	9	2,247	9	2,247			4	1,700	4	1,700			11,606	26,955
Westmoreland,	14	6,702	14	6,702			3	2,741	3	2,741			44,423	130,178
York,	5	651	5	651			1	500	1	500			7,703	19,450
Total,	498	101,658	410	95,817	88	7,241	259	52,471	184	47,561	75	4,910	1,431,328	$4,094,769

REPORT OF THE BUREAU OF MEDIATION AND ARBITRATION FOR THE YEAR 1918.

Industry.	Strikes Reported During the Year.						Strikes in Which Department Mediators Acted.						Total Estimated Loss.	
	Total number.	Employes involved.	Settled.	Employes involved.	Pending.	Employes involved.	Total number.	Employes involved.	Settled.	Employes involved.	Pending.	Employes involved.	Days lost.	Wages lost.
Building trades,	51	5,930	48	5,770	3	160	25	692	24	612	1	80	38,182	$149,258
Glass,	5	360	5	360			1	12	1	12			248	710
Clothing,	14	2,367	13	2,329	1	38	9	799	8	761	1	38	20,477	53,239
Food,	3	623	3	623			1	300	1	300			789	4,600
Leather,	5	740	3	725	2	15	2	650	2	650			2,700	7,100
Liquors,	5	156	5	156									629	1,557
Lumber,	3	135	3	135			2	120	2	120			2,756	9,125
Paper,	2	645	2	645			1	225	1	225			20,930	80,250
Textiles,	31	1,720	19	1,720	12		25	1,283	14	1,283	11		11,797	31,143
Metal,	109	16,896	101	15,523	8	1,283	72	11,496	68	10,621	4	875	131,545	579,905
Mining,	50	49,578	50	49,578			8	25,165	8	25,165			238,218	979,665
Public service,	28	5,032	27	5,032	1		14	3,882	13	3,882	1		30,883	275,562
Tobacco,	1	150	1	150										
Miscellaneous,	8	4,729	7	4,669	1	60	2	110	1	50	1	60	6,048	39,190
Mercantile,	1	600	1	600										
Hotels,	1	450	1	450									2,700	1,000
Total,	317	90,021	289	88,465	28	1,556	162	44,734	143	43,681	19	1,053	507,937	$2,212,304
Allegheny,	16	1,085	12	975	4	110	11	812	10	812	1		4,531	$21,890
Armstrong,	1	70	1	70			1	70	1	70			140	500
Bedford,	14	2,562	14	2,562									53,392	315,410
Berks,	9	1,532	9	1,532			7	1,519	7	1,519			7,257	24,421
Blair,	1	100	1	100			1	100	1	100			900	1,500
Bucks,	1	1,000	1	1,000									28,000	120,000

Butler,	1	300	1	300										
Cambria,	12	2,115	12	2,115			9	60	9	60			30,625	422,248
Carbon,	3	4,764	3	4,764			1	1,436	1	1,436			23,839	21,590
Chester,	2	18	2	18										
Clearfield,	2	176	2	176			1	126	1	126			2,442	8,550
Columbia,	5	312	5	312			2	76	2	76			552	8,936
Dauphin,	6	1,050	6	1,050			3	620	3	620			3,485	18,910
Delaware,	7	3,031	6	2,971	1	60	3	181	2	121	1	60	7,483	47,137
Elk,	2	49	2	49			2	49	2	49			633	1,830
Erie,	5	1,021	4	221	1	800	4	1,001	3	201	1	800	1,062	4,057
Fayette,	1	7	1	7			1	7	1	7			7	30
Franklin,	14	3,194	14	3,194			11	3,111	11	3,111			11,735	35,214
Indiana,	1	350	1	350									1,750	5,530
Lackawanna,	23	10,370	23	10,370			5	1,042	5	1,042			44,764	355,247
Lancaster,	14	732	14	732			10	491	10	491			3,560	10,528
Lawrence,	3	57	3	57			1	12	1	12			780	4,300
Lebanon,	1	135	1	135			1	135	1	135			1,350	5,670
Lehigh,	23	802	23	802			12	357	12	357			7,070	26,167
Luzerne,	23	5,627	23	5,627			5	348	5	348			18,189	55,821
Monroe,	1	50	1	50			1	50	1	50			150	1,000
Montgomery,	12	1,296	11	1,296	1		6	361	5	361	1		7,959	46,514
Montour,	2	128	2	128			2	128	2	128			1,656	6,474
Northampton,	8	513	8	513			2	20	2	20			1,143	3,151
Northumberland,	6	26,360	6	26,360			2	25,005	2	25,005			78,565	315,035
Philadelphia,	64	15,882	44	15,356	20	526	41	5,549	26	5,356	15	193	102,363	379,763
Potter,	1	225	1	225			1	225	1	225			20,510	80,000
Schuylkill,	12	2,874	11	2,814	1	60	3	355	3	355			14,200	55,843
Tioga,	1	10	1	10									30	135
Venango,	7	355	7	355			6	265	6	265			17,274	63,350
Warren,	2	450	2	450									300	1,500
Washington,	7	1,355	7	1,355			5	1,195	5	1,195			9,995	42,730
Westmoreland,	4	64	4	64			2	28	2	28			246	1,323
Total,	317	90,021	289	88,465	28	1,556	162	44,734	143	43,681	19	1,053	507,937	$2,212,304

Industry.	Strikes Reported During the Year.						Strikes in Which Department Mediators Acted.						Total Estimated Loss.	
	Total number.	Employes involved.	Settled.	Employes involved.	Pending.	Employes involved.	Total number.	Employes involved.	Settled.	Employes involved.	Pending.	Employes involved.	Days lost.	Wages lost.
Building trades,	54	4,368	54	4,368			38	2,076	38	2,076			136,204	$477,131
Chemicals,	1	250	1	250									3,750	22,500
Glass,	4	735	4	735			2	635	2	635			12,170	35,095
Clothing,	33	7,432	32	5,432	1	2,000	13	5,376	12	3,376	1	2,000	416,465	1,201,578
Foods,	27	7,109	24	2,984	3	4,125	11	3,806	9	1,806	2	2,000	329,348	690,719
Leather,	8	923	8	923			6	183	6	183			12,237	62,800
Liquor,	5	340	5	340			5	340	5	340			1,322	4,977
Paper,	1	200	1	200									1,000	4,000
Textile,	114	20,259	113	20,184	1	75	55	14,034	54	13,959	1	75	639,826	1,943,071
Metal,	78	19,155	75	14,968	3	4,187	50	15,421	48	11,251	2	4,170	1,723,561	4,420,434
Mines,	51	37,163	50	37,138	1	25	3	365	2	340	1	25	315,399	1,328,186
Public service,	26	23,449	25	23,354	1	95	14	10,945	13	10,850	1	95	183,881	795,795
Tobacco,	37	11,183	37	11,183			12	8,323	12	8,323			714,347	2,104,150
Miscellaneous,	40	38,691	40	38,691			19	1,371	19	1,371			172,494	824,496
Mercantile,	1	175	1	175			1	175	1	175			1,750	3,750
Hotels,	3	184	1	14	2	170	3	184	1	14	2	170	2,224	3,420
Theatres,	1	14	1	14			1	14	1	14			140	500
Total,	484	171,630	472	160,953	12	10,677	233	63,248	223	54,713	10	8,535	4,665,118	$13,943,502
Allegheny,	14	10,667	10	8,277	4	2,390	8	7,467	5	7,202	3	265	196,852	$747,183
Beaver,	4	450	4	450			4	450	4	450			14,875	87,060
Bedford,	1	200	1	200									3,200	16,000
Berks,	23	3,080	23	3,080			8	1,606	8	1,606			125,285	478,344
Blair,	6	11,388	6	11,388			3	65	3	65			47,164	238,776
Bucks,	2	4,086	2	4,086									8,344	41,444
Butler,	1	4,000			1	4,000	1	4,000			1	4,000	189,000	945,000

Cambria,	27	1,362	27	1,362			6	1,007	6	1,007			6,922	26,729
Carbon,	5	2,190	4	2,165	1	25	1	25			1	25	3,940	17,350
Chester,	19	11,597	19	11,597			12	77	12	77			82,279	181,546
Clearfield,	2	195	2	195			2	195	2	195			30,765	128,000
Columbia,	3	3,215	3	3,215			2	3,135	2	3,135			67,525	254,000
Crawford,	1	400	1	400									27,200	97,000
Dauphin,	1	62	1	62									1,240	9,900
Delaware,	3	7	3	7			3	7	3	7			14	88
Elk,	1	45	1	45									540	3,300
Erie,	5	166	5	166									2,536	12,422
Franklin,	7	2,187	7	2,187			6	2,075	6	2,075			115,099	567,800
Huntingdon,	2	450	2	450									3,850	35,525
Indiana,	1	57	1	57			1	57	1	57			969	5,000
Jefferson,	1	150	1	150			1	150	1	150			30,000	137,500
Lackawanna,	102	36,859	102	36,859			48	7,172	48	7,172			395,987	1,299,522
Lancaster,	12	439	11	422	1	17							8,893	20,695
Lawrence,	2	660	2	660			1	600	1	600			11,580	50,587
Lebanon,	3	1,528	3	1,528									300,504	1,951,000
Lehigh,	13	2,403	13	2,403			10	2,136	10	2,136			162,595	539,442
Luzerne,	33	7,174	33	7,174			11	1,607	11	1,607			197,118	668,870
Lycoming,	1	31	1	31									224	1,100
McKean,	1	50	1	50									3,750	20,500
Monroe,	3	257	3	257			3	257	3	257			4,983	10,500
Montgomery,	2	62	2	62			1	50	1	50			672	3,487
Montour,	1	280	1	280									2,520	75,000
Northampton,	10	3,981	10	3,981			7	3,669	7	3,669			130,380	588,272
Northumberland,	4	4,100	4	4,100			2	3,000	2	3,000			216,560	523,900
Philadelphia,	135	53,604	130	49,359	5	4,245	78	23,726	73	19,481	5	4,245	1,467,281	4,572,816
Schuylkill,	6	1,910	6	1,910			3	135	3	135			22,838	71,258
Susquehanna,	1	160	1	160			1	160	1	160			5,440	10,000
Venango,	1	30	1	30									150	1,000
Warren,	2	390	2	390									24,910	46,000
Washington,	3	313	3	313			1	50	1	50			4,350	25,000
Wayne,	1	50	1	50									300	750
Westmoreland,	6	302	6	302			1	150	1	150			16,434	110,980
Wyoming,	1	130	1	130			1	130	1	130			1,950	10,000
York,	12	963	12	963			7	90	7	90			22,070	73,922
Total,	484	171,630	472	160,953	12	10,677	238	63,248	223	54,713	10	8,535	4,665,118	$13,943,502

C.B CONNELLEY
COMMISSIONER.

WM J TRACY
CHIEF

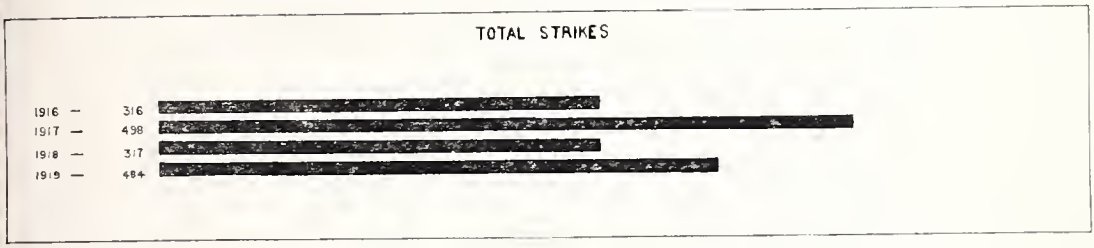
PENNSYLVANIA DEPARTMENT OF LABOR AND INDUSTRY

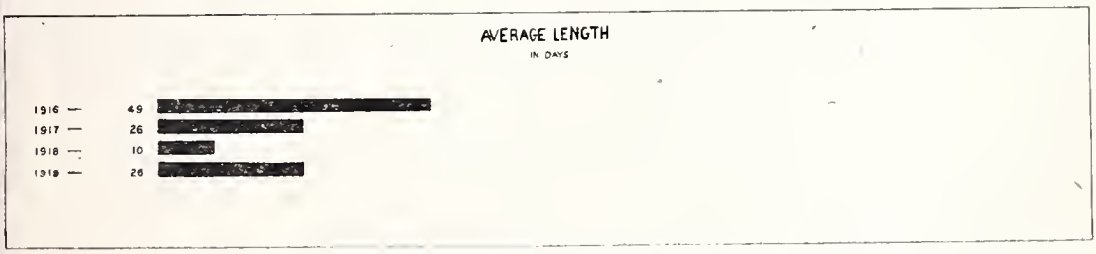
BUREAU OF MEDIATION AND ARBITRATION

HARRISBURG, PENNA.

RECORD OF STRIKES

1916—1919.





NOTE — COAL AND STEEL STRIKES NOT INCLUDED

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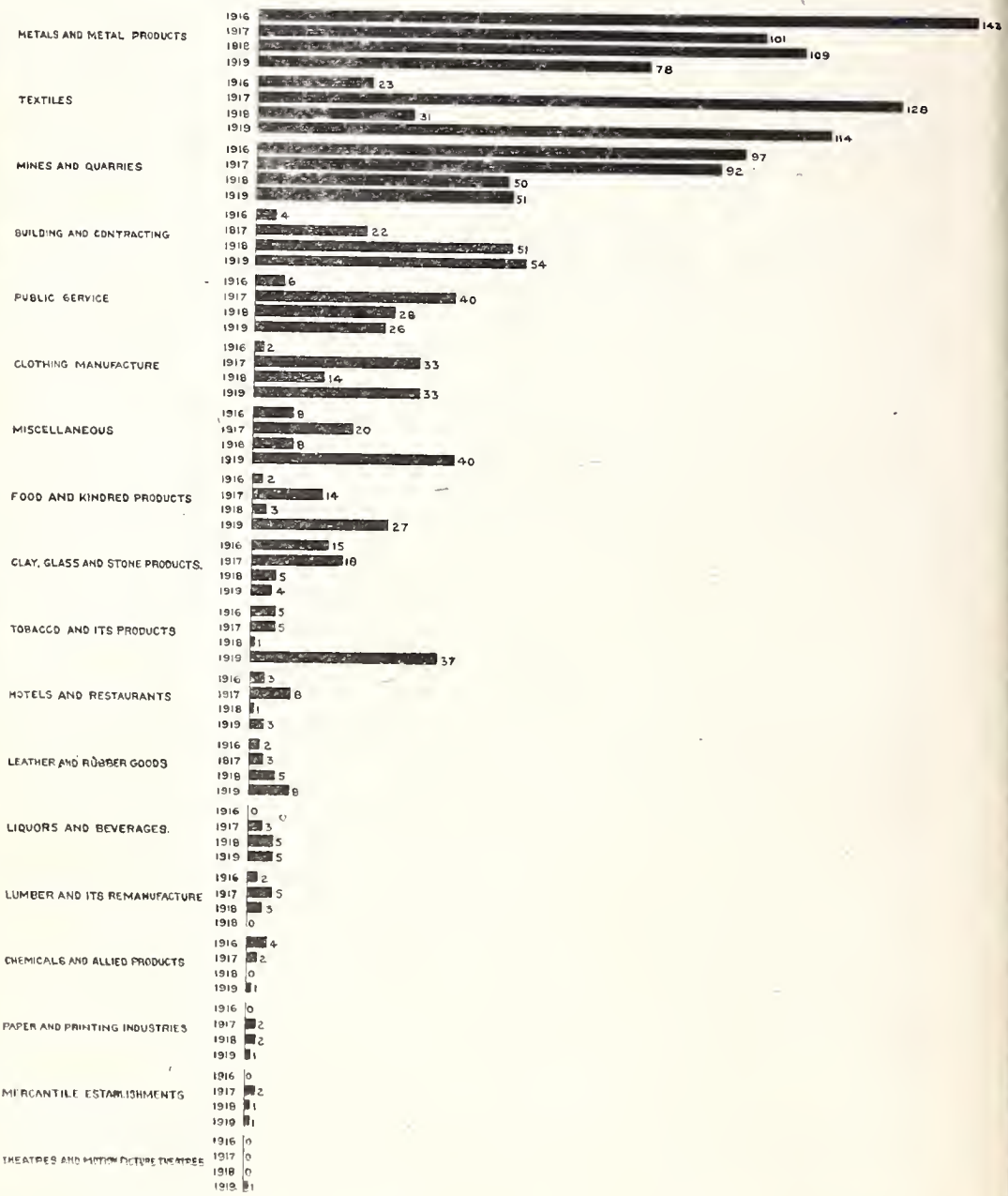

NOTE—COAL AND STEEL STRIKES NOT INCLUDED.

Commonwealth of Pennsylvania

THE BULLETIN

OF THE

Department of Labor and Industry

CLIFFORD B. CONNELLEY
Commissioner

VOLUME VII

SERIES OF 1920

NO. 2.

HARRISBURG, PENNA.
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1920.

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TABLE OF CONTENTS

INTRODUCTION

The accompanying tables present the accident record for the year 1919. These tables are compiled from two sources: Nos. 1 to 5 inclusive, are a tabulation of all accidents reported to the Compensation Bureau during 1919. Statistical information has been taken off in these cases at the time the report was received by the Bureau. The extent of disability and ultimate loss as a result of these accidents is, therefore, on an estimated basis. We believe, however, that from the accident prevention standpoint, it is of significance to have a record and tabulation of all accidents reported to the Bureau, and believe that these tables will be of value for such purposes.

The remaining tables contain only compensable accidents and are a record of all such accidents, the full information on which was obtained during 1919. This means that the tables include all fatal and major dismemberment cases, for which an award or agreement was approved during 1919, and for temporary cases they include those which have terminated during the year 1919.

Table 8 gives a summary of compensable cases since the Act went into effect in Pennsylvania. The fatal and major dismemberments are separately set forth by cause and industry group in Tables 7 and 9 to 13 inclusive.

Table 6 gives the same information for all compensable cases and includes the fatal cases and major dismemberments which are separately set forth in the other tables.

Table 14 combines by industries the losses previously set forth by degree of disability. In these tables the accidents have been combined to show the total severity of each cause by assigning to each kind of disability the severity weight shown in the first line of the table. Each temporary compensable case has been given a unit weight, while a fatality has been considered as the equivalent of 150 temporary cases. The weighting for the dismemberments is as set forth.

Table 15 summarizes the number of disabilities per thousand total cases in each industry. The average for all industries is 44 fatalities per thousand cases. We have set forth as a comparison with Pennsylvania figures the distribution of disabilities as taken from the Rubinow Standard Table. These latter figures are approximate only, as the classification of disabilities used by Dr. Rubinow are not in

exact agreement with the classification used in our tables, so that some assumptions had to be made in deriving his figures. We believe that they are, however, quite closely in accord with his original table.

This comparison shows that on account of the relatively large number of fatal cases and permanent disabilities in Pennsylvania, the average severity is the equivalent of 8.8 compensable cases. The standard table having a smaller number of these serious cases has an average severity the equivalent of but 5.2 compensable cases. The tremendous number of Pennsylvania employes working in coal mines, steel mills and on railroads where they are daily subjected to serious hazards accounts for this high average severity.

Table 16 summarizes the weighted severity in each industry by major causes. This Table gives the total severity and the total importance for each cause in the industries, as well as the severity per case or the relative seriousness of the accidents resulting from each cause. Thus in Metals and Metal Products the accidents were the equivalent of 104,000 temporary cases, while their severity averaged the equivalent of six compensable cases. Of the important industries, the greatest averaged severity was in Public Service. The reason for this is brought forth in Table 15 which shows that this industry had 81 fatalities per thousand cases, which is nearly twice the average for the State.

Table 7 which gives the detailed causes of these public service fatalities shows 42 from electricity and 199 from power vehicles, of which 101 resulted from being struck by cars and engines.

We believe that these tables as presented herewith will be of extreme value to both the employers and employes in Pennsylvania, first, in accident prevention work by pointing out the importance of various causes in different industries; and second, by setting forth the facts relative to the Compensation Law and its operation from January first, 1916 to December thirty-first, 1919.

DEPARTMENT OF LABOR AND INDUSTRY

BUREAU OF WORKMEN'S COMPENSATION

Industrial Code showing how accident and compensation cases are classified by the Workmen's Compensation Bureau of the Department of Labor and Industry.

BUILDING AND CONTRACTING.

Brick, Cement and Stone Work.
Building Construction.
Electrical Construction.
Painting and Decorating.
Paving and Road Construction.
Plumbing and Heating.
Railway Construction.
Roofing and Sheet Metal Work.
Structural Iron Work (Erecting).
Others of this class.

CHEMICAL AND ALLIED PRODUCTS.

Alcohol.
Charcoal.
Chemicals.
Cleansings and polishing preparations.
Dyestuffs and Extracts.
Fertilizers.
Fireworks.
Flavoring preparations.
Gasoline.
Glue and Gelatin.
Graphite and Graphite refining.
Grease and Tallow.
Ink—Printing.
Ink—Writing.
Malt and Yeast.
Matches.
Mucilage and Paste.
Oils—Crude.
Oils—Essential.
Oils—Linseed.
Oils—Lubricating.
Oils—Refined, Kerosene, etc.
Oils—Not specified.
Paints and Varnishes.
Patent and Proprietary Medicines.
Powder and other explosives.
Soap.
Sulphuric, Nitric and mixed acids.
Tar.
Toilet preparations.
Turpentine and Rosin.
Wood Alcohol and Acetate of Lime.
Others of this class.

CLAY, GLASS AND STONE PRODUCTS.

Artificial Stone.
Brick.
Cement.
Crucibles.
Emery and other abrasive wheels.
Glass Bottles.
Glass—cut.
Glass—decorative.
Glass—plate.
Glass—tableware.
Glass—window.
Grindstones.
Hones and whetstones.
Lamps and chimneys.
Lime.
Mantels and Tile.

Marble and granite work.
Mirrors.
Paving materials.
Pottery, terra cotta and fire clay products.
Wall plaster.
Others of this class.

CLOTHING MANUFACTURE.

Clothing—men's.
Clothing—women's and children's.
Corsets.
Fur Goods.
Furnishing goods—not specified.
Gloves—other than leather.
Hats and Caps—other than straw.
Hats—straw.
Hosiery and knit goods.
Ladies' skirts.
Millinery.
Neckwear.
Overalls.
Shirts.
Shirt Waists.
Suspenders.
Underwear.
Others of this class.

FOOD AND KINDRED PRODUCTS.

Baking Powder.
Bread and other bakery products.
Butter, cheese and condensed milk.
Canned and preserved goods.
Chocolate and cocoa products.
Coffee and spices, roasting, etc.
Confectionery.
Cordials and Syrups.
Flour and grist mill products.
Ice Cream.
Glucose and Starch.
Ice.
Molasses.
Slaughtering and meat packing.
Sugar refining.
Vinegar and Cider.
Others of this class.

LEATHER AND RUBBER GOODS.

Belting and Hose.
Boots and shoes.
Boots and shoes—rubber.
Gloves—leather.
Hides and Skins.
Leather—sole.
Leather—tanned, curried and finished.
Leather goods.
Rubber goods—not specified.
Trunks and suit cases.
Others of this class.

LIQUORS AND BEVERAGES.

Carbonated beverages.
Liquors—distilled.
Liquors—malt.
Liquors—vinous.
Table Waters.
Others of this class.

LUMBER AND ITS REMANUFACTURE.

Barrels, kegs, and tanks.
Beds and cots.
Billiard tables and supplies.
Bobbins and spools.
Boxes—cigar.
Boxes—packing.
Carriages, wagons and parts.
Children's Carriages, sleds, etc.
Cooperage, etc.
Furniture.
Lasts.
Lumber and timber products.
Models and patterns—not paper.
Planing mill products.
Refrigerators and ice boxes.
Washing machines and wringers.
Wood—turned and carved.
Wood novelties.
Others of this class.

PAPER AND PRINTING INDUSTRIES.

Bags—paper.
Boxes—fancy and paper.
Cardcutting and designing.
Electroplating, Engraving and Diesinking.
Labels and Tags.
Paper goods—not specified.
Photo Engraving.
Printing and Publishing.

Pulp goods.
Roofing Paper.
Sand and Emery paper, and cloth.
Stationery goods—not specified.
Stereotyping and electrotyping.
Wall paper.
Others of this class.

TEXTILES.

Bags—other than paper.
Blankets, Flannels, etc.
Braids, Tapes and Bindings.
Carpets and rugs.
Cordage and twine, jute and linen goods.
Cotton goods.
Curtains.
Dyeing and finishing textiles.
Haircloth.
Hammocks.
Handkerchiefs and Embroideries.
Horse Blankets and robes.
Shoddy.
Silk and Silk Goods and throwsters.
Thread.
Towels.
Waste.
Wool pulling.
Woolen, worsted and felt goods.
Yarns.
Others of this class.

LAUNDRIES.

Laundry Work.
Others of this class.

METALS AND METAL PRODUCTS.

Agricultural Implements and Machinery.
Aluminum and its products.
Automobiles and parts.
Axes and edge tools.
Axles.
Babbit metal and solder.
Bars—lead and lead sheets.
Bars—iron and steel.
Beds and bed springs.
Bicycles, motorcycles and parts.
Billets, blooms and slabs.
Boilers, tanks and stacks.
Bolts, nuts and rivets.
Brass and bronze products.
Cars and car wheels.
Castings—iron and steel.
Chains.
Cornices, ceilings, ventilators, etc.
Cutlery.
Elevators and Hoists.
Engines—gas and gasoline.
Engines—railroad.
Engines—stationary.
Engines—traction.
Ferro alloys.
Files.
Fire escapes.
Fire arms and ammunition.
Fixtures—gas and electric, lamps and reflectors.
Forgings—Iron and steel.
Frogs and switches.
Hardware and specialties.
Hoops, bands and cotton ties.
Horse shoes.
Ingots—iron and steel.
Iron—charcoal.
Iron—pig.
Iron and steel work—ornamental.
Instruments—professional and scientific.
Machinery and parts.
Machine Repair shops.
Machine tools.
Meters.
Motors, dynamos, generators, etc.
Needles, pins, hooks and eyes.
Nails and spikes.
Piling—rolled sheet.
Pipes and tubing.
Plates—iron and steel.
Plumber's supplies and steam fittings.
Pulleys, hangers and bearings.
Pumps and valves.
Rails—iron and steel.
Radiators.
Railroad supplies.
Rods—steel, in coils.
Safes, vaults and locks.
Saws.
Scales.
Scrap iron and steel.
Shafting—cold rolled, drawn and turned.

Shapes—structural.
Shapes—other iron and steel.
Sheets.
Shovels, scoops and spades.
Silverware and plated ware.
Smelting and refining.
Springs.
Stoves, heaters and Ranges.
Supplies—electrical.
Tin and Terne plate.
Tinner's and Roofer's supplies.
Typefounding.
Typewriters.
Ware—tin and stamped.
Ware—enamel and galvanized.
Watches, clocks, jewelry, etc.
Wire Products.
Garages making repairs.
Others of this class.

MINES AND QUARRIES.

Clay.
Ore—iron.
Sand and Gravel.
Slate—roofing.
Slate—other than roofing.
Stone.
Stone—cut.
Stone—crushed.
Coal—anthracite.
Coal—bituminous.
Others of this class.

PUBLIC SERVICE.

Repair Shops.
Auto Transit Companies.
Canal and Navigation Companies.
Electric Light, Heat and Power Companies.
Ferry Companies.
Gas Companies.
Gas Companies (Natural).
Gas and Electric Companies.
Inclined Plane Companies.
Pipe Line Companies.
Municipal Sewage Treatment Works.
Steam Heating Companies.
Steam Railroads.
Electric Railway Companies.
Telephone Companies.
Toll Bridge Companies.
Turnpike Companies.
Water Companies.
Others of this class.

TOBACCO AND ITS PRODUCTS.

Cheroots and stogies.
Chewing tobacco.
Cigars.
Cigarettes.
Smoking tobacco.
Others of this class.

MISCELLANEOUS.

Artificial flowers, feathers and plumes.
Awnings, tents and sails.
Asbestos products.
Baskets, rattan and willow ware.
Brooms.
Brushes.
Buttons.
Caskets and Undertakers' Supplies.
Coke.
Cork cutting.
Curled hair.
Engineering service.
Fancy articles and specialties.
Flags, banners, regalia, emblems, etc.
Fuel, manufactured.
Gold and silver leaf, and foil.
Hair work.
Handstamps, stencils and brands.
House furnishing goods—not specified.
Junk—paper, rags, etc.
Laboratory service.
Mats and matting.
Mattresses and bedding.
Musical instruments—not specified.
Nursery products.
Oil cloth and linoleum.
Optical goods.
Packing—Steam, etc.
Pens and pencils.
Photographic apparatus and supplies.
Pianos and organs.
Pipes—tobacco.
Plants and flowers.

Signs.
Ship and boat building.
Soda water apparatus.
Sporting and athletic goods.
Statuary and art goods.
Surgical appliances and artificial limbs.
Teeth.
Toys and games.
Umbrellas and parasols.
Upholstering.
Wheelbarrows.
Window shades and fixtures.
Oil well supplies.
Others of this class.

HOTELS AND RESTAURANTS.

MERCANTILE.

JOBBERS AND WAREHOUSES.

MUNICIPALITIES.

Items of interest from the statistical tables of the Workmen's Compensation Bureau of the Department of Labor and Industry for the year 1919. Total for previous years are also shown and may be used as a comparison.

Total number of accidents reported in 1913	12,752
Total number of accidents reported in 1914,	38,126
Total number of accidents reported in 1915,	61,540
Total number of accidents reported in 1916,	255,616
Total number of accidents reported in 1917,	227,880
Total number of accidents reported in 1918,	184,844
Total number of accidents reported in 1919,	152,544
Fatal accidents reported in 1913,	270
Fatal accidents reported in 1914,	379
Fatal accidents reported in 1915,	1,203
Fatal accidents reported in 1916,	2,670
Fatal accidents reported in 1917,	3,072
Fatal accidents reported in 1918,	3,403
Fatal accidents reported in 1919,	2,569

1919.

Total number of accidents reported,	152,544
Number of fatal accidents reported,	2,569
Number of serious accidents reported,	38,942
Number of minor accidents reported,	111,033
Number of accidents to males,	148,660
Number of accidents to females,	3,884
Number of accidents to minors (under 16 years),	768
Number of days lost through accidents,	2,053,277

Average number of days lost for each accident, ...	13.46
Total wage loss through accidents, ...	$8,756,697
Average wage loss for each accident reported, ...	$57.47
Average daily wage loss of those injured, ...	$4.26
Number of accidents occurring to married employes, ...	91,354
Number of accidents occurring to unmarried employes, ...	55,033
Number of dependents of those injured, ...	125,380

NOTE: A serious accident is one in which the employe loses more than fourteen days time. A minor accident is defined as one resulting in the loss of less than fifteen days time.

There were 668 boys and 100 girls under sixteen years of age injured. Lack of safeguards was responsible for 8,025 of the injuries to workers.

Classification of injuries to women show that 21 were fatal; 821 serious, and 3,042 minor, resulting in disability for a period of less than fifteen days.

Accidents to male employes resulted in 2,548 fatalities, 38,121 serious injuries, and 107,991 minor injuries, resulting in a disability for a period of less than fifteen days.

In the building and contracting trades there was a total of 8,209 accidents reported. Of this number 127 proved fatal, 2,274 were serious, and 5,808 minor.

Chemicals and allied products had a total of 2,274 accidents reported, of which 43 were fatal cases, 613 serious, and 1,618 were minor.

Clay, glass and stone products show a total of 4,242 accidents reported, with 40 fatalities, 750 serious, and 3,452 minor.

In the manufacturing of clothing there were 916 accidents reported, of which 8 were fatal, 186 serious, and 722 minor.

Food and kindred products show a total of 3,219 accidents reported, with 26 fatal cases, 891 serious, and 2,302 minor cases.

Leather and rubber goods show a total of 1,655 accidents reported, with 10 fatal, 303 serious, and 1,342 minor cases.

Six hundred and eighty-nine (689) accidents were reported in the liquor and beverage business, including 8 fatal, 169 serious, and 512 minor cases.

Lumber and its remanufacture was responsible for 3,150 accidents, with 31 fatal, 974 serious, and 2,145 minor.

In the paper and printing industry 1,897 accidents were reported, of which 19 were fatal, 420 serious, and 1,458 minor.

In the textile industry 2,084 accidents were reported, of which 18 were fatal, 485 serious, and 1,581 minor.

Laundries show a total of 153 accidents reported, of which 1 was fatal, 51 serious, and 101 minor cases.

In the metal and metal product industry, the total number of accidents reported for the year was 40,558, including 383 fatal cases, 9,375 serious, and 30,800 minor.

The greatest number of accidents for the year was reported in the mining industry, including quarries. This industry showed that there were 1,142 killed, with a total of 45,513 cases reported, of which 11,609 were serious, and 32,762 minor cases.

The public service companies reported 26,025 accidents, of which 480 were fatal cases, 7,018 serious, and 18,527 minor cases.

Tobacco and its products reported only 142 accidents for the year, of which 0 were fatal, 44 serious, and 98 minor cases.

Miscellaneous industries were responsible for 6,257 accidents, of which 121 were fatal, 1,971 serious, and 4,165 minor cases.

Hotels and restaurants show a total of 583 accidents reported, of which 10 were fatal, 192 serious, and 381 minor cases.

Jobbers and wholesalers show a total of 1,064 accidents reported, of which 17 were fatal, 307 serious, anr 740 minor cases.

In the mercantile establishments, 2,888 accidents were reported, with 29 fatal, 858 serious, anr 2,001 minor cases.

Municipalities show 1,026 accidents reported, of which 56 were fatal, 452 serious, and 518 minor cases.

Accidents reported during the year showed a loss of 122 eyes, 54 arms, 88 hands, 773 fingers, 77 legs, 80 feet, and 144 toes.

Of the 152,544 accidents reported, 57,105 were accidents in which compensation was paid in the various industries of the State. The total amount of compensation awarded and paid, was $10,982,836.

In building and contracting, compensation was awarded and paid in 3,482 cases, of which 150 were fatal. The amount of compensation awarded and paid, was $592,650.

In chemicals and allied products, compensation was awarded and paid in 991 cases, of which 74 were fatal. The amount of compensation awarded and paid, was $255,355.

In clay, glass and stone products, compensation was awarded and paid in 1,339 cases, of which 48 were fatal. The amount of compensation awarded and paid was $241,941.

In clothing manufacture, compensation was awarded and paid in 341 cases, of which 5 were fatal. The amount of compensation awarded and paid, was $24,122.

In food and kindred products, compensation was awarded and paid in 1,295 cases, of which 33 were fatal. The amount of compensation awarded and paid, was $163,813.

In leather and rubber goods, compensation was awarded and paid in 554 cases, of which 11 were fatal. The amount of compensation awarded and paid was $69,088.

In liquors and beverages, compensation was awarded and paid in 309 cases, of which 14 were fatal. The amount of compensation awarded and paid was $58,619.

In lumber and its remanufacture, compensation was awarded and paid in 1,528 cases, of which 29 were fatal. The amount of compensation awarded and paid was $170,048.

In paper and printing industries, compensation was awarded and paid in 697 cases, of which 14 were fatal. The amount of compensation awarded and paid, was $80,062.

In textiles, compensation was awarded and paid in 806 cases, of which 18 were fatal. The amount of compensation awarded and paid, was $90,862.

In laundries, compensation was awarded and paid in 84 cases, of which 1 was fatal. The amount of compensation awarded and paid was $8,551.

In metal and metal products, there were 15,146 compensable accidents, of which 412 were fatal. The amount of compensation awarded and paid, was $2,334,210.

The greatest amount of compensation paid in any one industry in the State was $5,171,579, in mines and quarries. This amount includes the amount of compensation paid and awarded. The compensable accidents in this class of industry were 20,464, of which 1,154 were fatal. The greatest number of compensable accidents also occurred in the Mining Industry.

The lowest amount of compensation paid in any industry of the State was $5,214, in tobacco and its products. In this industry there were only 65 compensable accidents, 1 of which was fatal.

In the public service industries, compensation was awarded and paid in 3,905 cases, of which 316 were fatal. The amount of compensation awarded and paid, was $881,433.

In hotels and restaurants, compensation was awarded and paid in 264 cases, of which 10 were fatal. The amount of compensation awarded and paid, was $21,304.

In mercantile establishments, compensation was awarded and paid in 1,313 cases, of which 36 were fatal. The amount of compensation awarded and paid, was $130,050.

In jobbers and wholesalers, compensation was awarded and paid in 438 cases, of which 12 were fatal. The amount of compensation awarded and paid was $51,083.

In municipalities, compensation was awarded and paid in 396 cases, of which 50 were fatal. The amount of compensation awarded and paid, was $183,263.

In miscellaneous industries, compensation was awarded and paid in 2,688 cases, of which 108 were fatal. The amount of compensation awarded and paid, was $449,589.

TABLE NO. 1.

Summary of all Industrial Accident cases reported to the Workmen's Compensation Bureau during the year 1919 as to the various Classes of Industry by—Nature of Injury—Part of Body Injured—Loss of Parts—Degree and Sex—Social Condition—Estimated time and wage loss—Etc., also showing the total number of Industrial Accident cases for the years 1918, 1917 and 1916 as a comparison.

TABLE NO. 1.

Industries.	Nature of Injury.								Part Injured.								
	Burns and scalds.	Crushes and bruises.	Cuts and lacerations.	Fractures, sprains and dislocations.	Hernia.	Blood poisoning.	Punctures.	Unclassified.	Trunk.	Head and face.	Eyes.	Arms.	Hands.	Fingers.	Legs.	Feet.	Toes.
Building and contracting, --	309	3,039	1,715	2,043	74	254	700	75	1,648	817	310	492	914	1,180	923	1,624	301
Chemicals & allied products,	363	711	410	527	27	91	97	48	452	218	147	138	277	344	245	364	89
Clay, glass & stone products,	240	1,402	1,553	715	48	128	118	38	586	306	265	285	685	928	385	553	249
Clothing manufacture. -----	46	214	290	125	10	124	100	7	93	36	26	57	131	444	56	63	10
Food and kindred products,	196	1,001	849	804	31	203	111	24	587	211	71	273	527	718	299	409	124
Leather and rubber goods,	88	574	507	265	14	135	60	12	214	96	58	117	254	615	95	133	73
Liquors and beverages, ----	41	233	191	177	10	23	11	3	119	52	20	61	131	129	80	74	23
Lumber and its remanufacture, ----------	47	890	1,252	601	25	119	102	14	435	142	105	151	403	1,087	369	349	109
Paper & printing industries,	107	749	533	344	17	65	63	19	227	103	53	131	283	666	127	232	75
Textiles, ----------	115	638	610	424	23	137	121	16	280	121	56	193	333	616	144	251	90
Laundries, ----------	28	50	14	45	4	8	1	3	23	6	2	25	37	30	13	17	--------
Metals and metal products,	4,374	14,604	11,361	7,108	421	1,343	1,090	257	5,178	2,808	3,629	1,953	4,493	9,684	3,376	6,368	3,069
Mines and quarries, --------	1,890	19,382	13,521	8,169	292	792	1,306	161	8,612	5,172	2,815	1,895	4,880	8,558	5,542	6,207	1,832
Public service, ----------	1,607	11,709	5,690	6,054	190	227	428	120	4,880	2,510	1,488	1,259	2,812	4,236	2,908	4,455	1,477
Tobacco and its products,--	8	48	31	45	1	5	3	1	24	6	--------	16	25	34	14	20	3
Miscellaneous, ----------	329	2,028	1,566	1,725	96	306	185	82	1,217	567	441	435	623	1,069	745	868	292
Hotels and restaurants, ----	95	106	182	130	4	46	13	7	99	39	13	58	135	130	48	51	10
Mercantile establishments, --	72	930	651	903	44	143	145	30	628	225	54	261	443	437	309	446	85
Jobbers and wholesalers, --	30	391	181	315	23	50	62	12	238	65	20	83	160	151	131	179	37
Municipalities, ----------	56	319	171	367	17	25	38	33	272	121	31	72	115	76	167	147	25
Total No. accidents, 1919, --	10,041	58,988	41,318	30,886	1,371	4,224	4,754	962	25,812	13,621	9,604	7,955	17,661	31,132	15,976	22,810	7,973
Total No. accidents, 1918, --	12,394	71,831	51,021	36,713	1,576	4,045	4,997	2,267	31,176	16,474	11,727	10,379	20,515	37,265	19,288	27,595	10,425
Total No. accidents, 1917, --	15,450	82,307	60,565	41,376	1,792	2,696	7,140	16,554	35,380	18,985	15,822	13,217	26,130	49,015	22,541	34,496	12,294
Total No. accidents, 1916, --	17,282	87,071	71,868	37,400	1,254	3,755	8,387	28,599	33,440	21,631	20,665	15,129	30,513	62,656	22,954	34,334	14,294
Grand total No. accidents,--	55,167	300,197	224,772	146,375	5,993	14,720	25,278	48,382	125,808	70,711	57,818	46,680	94,819	180,068	80,759	119,235	44,986

TABLE NO. 1.—Continued.

Industries.	Loss of Parts.							Degree and Sex.						Time and Wage Loss.	
								Males.			Females.				
	Eyes.	Arms.	Hands.	Fingers.	Legs.	Feet.	Toes.	Fatal.	Serious.	Minor.	Fatal.	Serious.	Minor.	Days.	Wages.
Building and contracting,	7	2	1	35	4	4	3	127	2,270	5,787	--------	4	21	117,913	$539,504
Chemicals and allied products,	1	--------	2	6	1	3	3	41	602	1,556	2	11	62	31,269	132,355
Clay, glass and stone products,	1	1	2	17	--------	4	1	40	733	3,348	--------	17	104	48,468	197,755
Clothing manufacture,	--------	--------	--------	1	--------	--------	--------	6	124	412	2	62	310	10,670	32,829
Food and kindred products,	--------	1	2	20	--------	3	3	26	835	2,099	--------	56	203	45,618	168,038
Leather and rubber goods,	--------	2	3	20	--------	--------	1	10	286	1,254	--------	17	88	18,328	71,336
Liquors and beverages,	2	--------	--------	2	--------	1	--------	8	167	502	--------	2	10	9,541	38,879
Lumber and its remanufacture,	6	--------	4	72	--------	--------	10	30	959	2,080	1	15	65	49,028	168,415
Paper and printing industries,	--------	1	5	13	--------	2	--------	18	362	1,258	1	58	200	24,661	81,289
Textiles,	--------	2	5	19	2	--------	1	18	367	1,074	--------	118	507	26,593	86,345
Laundries,	--------	--------	2	--------	--------	--------	--------	1	37	59	--------	14	42	2,913	8,404
Metals and metal products,	41	11	25	288	14	15	60	380	9,273	30,347	3	102	453	505,335	2,341,434
Mines and quarries,	31	16	21	145	16	16	52	1,142	11,608	32,759	--------	1	3	625,519	2,756,010
Public service,	8	20	13	71	37	29	7	477	6,966	18,401	3	52	126	348,159	1,439,869
Tobacco and its products,	--------	--------	--------	1	--------	--------	--------	--------	34	58	--------	10	40	2,158	6,335
Miscellaneous,	17	4	1	47	2	3	1	118	1,862	3,878	3	109	287	97,157	393,043
Hotels and restaurants,	--------	--------	--------	--------	--------	--------	--------	8	148	239	2	44	142	9,157	25,681
Mercantile establishments,	2	--------	1	12	--------	--------	--------	27	763	1,669	2	95	332	43,421	138,141
Jobbers and wholesalers,	1	--------	--------	1	--------	--------	--------	17	294	718	--------	13	22	15,819	58,305
Municipalities,	5	--------	1	3	1	--------	2	54	431	493	2	21	25	21,550	72,730
Total number accidents, 1919,	122	54	88	773	77	80	144	2,548	38,121	107,991	21	821	3,042	2,053,277	$8,756,697
Total number accidents, 1918,	151	60	98	1,148	131	108	160	3,379	52,660	124,641	24	1,123	3,017	2,767,471	10,286,872
Total number accidents, 1917,	432	81	214	749	144	112	81	3,012	80,292	140,173	60	1,477	2,866	4,302,363	11,412,598
Total number accidents, 1916,	366	59	105	1,111	111	48	87	2,655	58,670	188,841	15	1,044	4,391	3,025,371	7,535,059
Grand total number accidents,	1,071	254	505	3,781	463	348	472	11,594	229,743	561,646	120	4,465	13,316	12,148,482	$37,991,226

TABLE NO. 1.—Continued.

Industries.	Social Condition.			Minors Under 16 Years.		Number of dependents.	Accident due to lack of safeguards.	Total Number of Accidents.				Grand total.
	Married.	Single.	Not given.	Males.	Females.			1919.	1918.	1917.	1916.	
Building and contracting,	4,745	2,782	682	15	----------	5,905	505	8,209	9,190	13,384	15,146	45,929
Chemicals and allied products,	1,467	716	91	10	1	2,121	176	2,274	3,039	3,485	5,918	14,666
Clay, glass and stone products,	2,504	1,640	98	35	4	4,315	754	4,242	4,727	7,012	7,179	23,160
Clothing manufacture,	341	512	63	30	19	410	99	916	1,107	1,652	2,037	5,712
Food and kindred products,	1,786	1,243	190	31	5	2,266	273	3,219	2,991	4,300	5,101	15,611
Leather and rubber goods,	936	686	33	15	4	1,279	168	1,655	1,424	1,939	2,329	7,347
Liquors and beverages,	477	195	17	3	----------	674	52	689	877	1,453	1,682	4,701
Lumber and its remanufacture,	1,816	1,166	168	29	----------	2,236	280	3,150	3,118	4,433	4,955	15,656
Paper and printing industries,	809	976	112	38	4	1,008	236	1,897	1,878	2,534	3,514	9,823
Textiles,	937	1,043	104	67	35	1,046	192	2,084	2,209	3,145	3,888	11,326
Laundries,	72	69	12	1	1	72	10	153	233	347	436	1,169
Metals and metal products,	24,165	14,760	1,633	117	10	39,314	3,992	40,558	57,134	75,131	95,986	268,809
Mines and quarries,	28,007	16,699	807	142	----------	34,843	224	45,513	51,883	57,482	54,957	209,835
Public service,	16,949	7,984	1,092	29	1	22,715	469	26,025	32,625	37,553	36,571	132,774
Tobacco and its products,	76	62	4	----------	----------	70	14	142	136	187	197	662
Miscellaneous,	3,230	2,447	580	32	8	3,899	292	6,257	6,826	6,294	7,177	26,554
Hotels and restaurants,	282	245	56	2	1	211	23	583	669	968	1,125	3,345
Mercantile establishments,	1,402	1,189	297	62	7	1,472	125	2,888	2,970	4,129	4,798	14,785
Jobbers and wholesalers,	604	382	78	8	----------	695	46	1,064	840	1,244	1,637	4,785
Municipalities,	749	237	40	2	----------	829	45	1,026	968	1,258	983	4,235
Total number accidents, 1919,	91,354	55,033	6,157	668	100	125,380	8,025	152,544	184,844	227,880	255,616	820,884
Total number accidents, 1918,	111,272	65,084	8,488	1,151	130	153,290	10,512	184,844	----------	----------	----------	----------
Total number accidents, 1917,	132,332	84,884	10,664	1,002	130	181,069	17,877	227,880	----------	----------	----------	----------
Total number accidents, 1916,	147,175	99,116	9,325	1,257	225	211,327	13,480	255,616	----------	----------	----------	----------
Grand total number accidents,	482,133	304,117	34,634	4,078	585	671,066	49,894	820,884	----------	----------	----------	----------

TABLE NO. 2.

This table is a summary of the Fatal Industrial Accident cases reported to the Workmen's Compensation Bureau during the year 1919 classified according to the Industrial Code showing—Cause—Nature of Injury—Sex—Social Condition—Number of Dependents—Age Groups—etc., with totals for the three previous years. These cases are also classified by Counties for the years 1919, 1918, 1917, and 1916 as well as the grand total for each County.

TABLE NO. 2.

Industries.	Cause.										Nature of Injury.		
	Machinery.	Explosives, electricity, fires, hot and corrosive substances.	Falling objects.	Fall of persons.	Handling tools and objects.	Power vehicles.	Stepping on sharp objects.	Running into or striking against objects.	Poisonous substances.	Miscellaneous.	Burns and scalds.	Crushes and bruises.	Cuts and lacerations.
BUILDING AND CONTRACTING,	14	20	19	32	4	22				16	14	38	10
Brick, cement and stone work,			2			3						2	2
Building construction,	6	5	12	8	1	8				9	3	20	2
Electrical construction,		1											
Painting and decorating,				8						1		1	
Paving and road construction,	2	1	1	1	2	2					1	3	
Plumbing and heating,				1		2							1
Railway construction,						1				2		1	
Roofing and sheet metal work,	2	1		2							1	1	1
Structural iron work (erecting),		8		2							8		
Others of this class,	4	4	4	10	1	6				4	1	10	4
CHEMICALS AND ALLIED PRODUCTS,	7	14	3	5		5				9	10	9	3
Alcohol,										2			
Chemicals,	1	2	1	3						1	2	2	
Fertilizers,	1												
Glue and gelatin,										1			
Grease and tallow,		1									1		
Mucilage and paste,										1			
Oils—crude,	3		1			2				1		2	1
Oils—refined, kerosene, etc.,	1	5	1	1		2				3	5	3	
Paints and varnishes,				1		1						1	
Powder and other explosives,		6									2		2
Wood alcohol and acetate of lime,	1											1	

CLAY, GLASS AND STONE PRODUCTS,	5	5	5	2	2	8				13	2	9	6
Brick,	2		3		1	1				4		3	1
Cement,	2	2	1	2		4					1	3	2
Glass—cut,					1								
Glass—plate,	1	1				1				2		2	1
Lime,		1				2				1	1		2
Pottery, terra cotta and fire clay products,		1	1							6		1	
CLOTHING MANUFACTURE,	3	2		1				1		1	2	2	
Clothing—men's,		1									1		
Clothing—women's and children's,	1	1									1	1	
Hosiery and knit goods,	2									1		1	
Shirts,				1									
Shirt waists,								1					
FOOD AND KINDRED PRODUCTS,	5	2	1	6	1	6				5	2	9	5
Bread and other bakery products,	2	2				2				3		5	1
Butter, cheese and condensed milk,	2			1							1	1	
Chocolate and cocoa products,						1				1	1		
Confectionery,	1			1									1
Flour and grist mill products,				2		1						1	1
Ice cream,				1									1
Ice,			1			2						2	1
Slaughtering and meat packing,					1					1			
Sugar refining,				1									
LEATHER AND RUBBER GOODS,	4	1			1	3		1			1	5	
Leather—sole,	1					2						2	
Leather—tanned, curried and finished,	1	1			1	1					1	2	
Leather goods,								1					
Trunks and suit cases,	1											1	
Others of this class,	1												
LIQUORS AND BEVERAGES,	2	3			2	1					2	1	3
Liquors—malt,	2	3			2	1					2	1	3
LUMBER AND ITS REMANUFACTURE,	9	2	8	3		7				2	1	11	4
Boxes—cigar,						1							
Carriages, wagons and parts,	1	1										1	
Furniture,	2					1							1
Lumber and timber products,	2	1	8	3		4				2	1	8	2
Planing mill products,	4					1						2	1

TABLE NO. 2—Continued.

Industries.	Cause.										Nature of Injury.		
	Machinery.	Explosives, electricity, fires, hot and corrosive substances.	Falling objects.	Fall of persons.	Handling tools and objects.	Power vehicles.	Stepping on sharp objects.	Running into or striking against objects.	Poisonous substances.	Miscellaneous.	Burns and scalds.	Crushes and bruises.	Cuts and lacerations.
PAPER AND PRINTING INDUSTRIES,	4	2		3		5				5	2	4	3
Boxes—fancy and paper,						1							1
Paper goods—not specified,	2			1		2				2	1	2	1
Printing and publishing,				1		2						1	
Pulp goods,		2		1						3	1		1
Roofing paper,	2											1	
TEXTILES,	4	7		2	2	1		2			6	4	2
Bags—other than paper,						1						1	
Carpets and rugs,	1							1				1	
Cordage and twine, jute and linen goods,								1					
Cotton goods,		1									1		
Curtains,				1									
Dyeing and finishing textiles,		2									2		
Silk and silk goods and throwsters,		3									2		
Waste,	2											1	1
Wool pulling,					1								1
Yarns,	1	1		1							1	1	
Others of this class,					1								
LAUNDRIES,						1							1
Laundry work,						1							1
METALS AND METAL PRODUCTS,	121	54	34	38	25	80				31	48	136	37
Agricultural implements and machinery,	2											2	
Automobiles and parts,	2											1	

Axes and edge tools,										1			
Axles,	1											1	
Babbit metal and solder,	1										1		
Bars—iron and steel,	1				2							2	
Billets, blooms and slabs,	57	32	21	14	7	52				16	28	67	25
Boilers, tanks and stacks,	4	1			1	1				1	1	5	
Bolts, nuts and rivets,						1							
Brass and bronze products,				1								1	
Cars and car wheels,	1	2	1			1					1	2	
Castings—iron and steel,	6	2	1	3		4				2	2	7	2
Elevators and hoists,					2								
Engines—gas and gasoline,						1						1	
Engines—railroad,	3			3	1	2				1		2	1
Engines—stationary,					1								
Fire arms and ammunition,		1	1		1							2	
Forgings—iron and steel,	1	3	1	3		1					3	4	1
Hardware and specialties,	2	1									1		
Ingots—iron and steel,	1	1									1	1	
Iron—pig,	2	1	1	1		5					2	5	
Machinery and parts,	7	4	3	3	2	1				1	3	7	1
Machine repair shops,	1				2								
Machine tools,	1				1								
Motors, dynamos, generators, etc.,	1	1		1	1	2					1	1	1
Pipes and tubing,	4		1	3	1	4				1		10	
Plates—iron and steel,	8	1				2					1	2	1
Plumber's supplies and steam fittings,					1					1			
Railroad supplies,	3		1	1	1							1	2
Saws,	2												
Scrap iron and steel,	4	1								1	1	2	1
Shapes—structural,	1		2	1	1							2	
Sheets,	1		1			1						2	1
Shovels, scoops and spades,	1												
Silverware and plated ware,	1											1	
Springs,	1												
Supplies—electrical,	1											1	
Tin and terne plate,	1			1								1	1
Ware—tin and stamped,										1			
Wire products,	4	3		1						4	2	2	
Garages making repairs,				2		2				1		1	
MINES AND QUARRIES,	37	254	543	25	14	231		1		37	159	505	117
Clay,			1									1	
Ore—iron,			3									1	1
Sand and gravel,	2		4			2				1		2	1
Slate—roofing,			1										
Slate—other than roofing,			4									2	
Stone,	1	1	2		1	2				1		6	1

TABLE NO. 2—Continued.

Industries.	Cause.										Nature of Injury.		
	Machinery.	Explosives, electricity, fires, hot and corrosive substances.	Falling objects.	Fall of persons.	Handling tools and objects.	Power vehicles.	Stepping on sharp objects.	Running into or striking against objects.	Poisonous substances.	Miscellaneous.	Burns and scalds.	Crushes and bruises.	Cuts and lacerations.
Stone—crushed,		1	3	2								5	
Coal—anthracite,	18	208	270	21	7	115				25	146	271	62
Coal—bituminous,	16	44	255	2	6	112		1		10	13	217	52
PUBLIC SERVICE,	28	55	10	19	9	334		1		24	67	183	124
Repair shops,	6	9	4	4	4	16				3	10	13	12
Auto transit companies,		1									1		
Canal and navigation companies,										6		1	
Electric light, heat and power companies,	2	22	1	2		1				1	19	2	
Gas companies,						1					1		
Gas companies (natural),	1											1	
Gas and electric companies,				1									
Steam railroads,	17	9	4	9	3	299		1		9	27	152	109
Electric railway companies,	1	7	1	2	2	15				3	6	12	2
Telephone companies,		5		1						2	2	1	
Turnpike companies,						1						1	
Water companies,		1											1
Others of this class,	1	1				1					1		
TOBACCO AND ITS PRODUCTS,													
MISCELLANEOUS,	21	11	8	37	3	17		2		22	7	23	11
Asbestos products,	2			2								2	
Brooms,				1									
Coke,	2		1			1				1		3	
Junk—paper, rags, etc.,				1									
Oil cloth and linoleum,		1									1		
Optical goods,										1			
Photographic apparatus and supplies,				1									

Plants and flowers,						2						1	
Ship and boat building,	10	7	7	25	2	3		2		8	5	4	5
Upholstering,	1												1
Oil well supplies,	1			1								1	
Others of this class,	5	3		6	1	11				12	1	12	5
HOTELS AND RESTAURANTS,	4	1		2						3	1	3	
MERCANTILE,	5	1	1	6	2	6				8	1	10	5
JOBBERS AND WAREHOUSES,	3	1		3	2	5		1		2	1	8	2
MUNICIPALITIES,	2	1	7	7	3	18				18	1	17	10
PART INJURED,	278	436	639	191	70	750		9		196	327	977	343
Trunk,	133	352	407	72	33	469		1		153	292	723	185
Head and face,	92	61	179	100	9	157		3		36	21	190	69
Eyes,													
Arms,	7	3	3	2	3	11				1		5	16
Hands,	6	7	2		6	4		1			4	2	11
Fingers,	7	1		1	10	1		2		1	1	2	3
Legs,	27	8	43	14	5	92		2		5	7	48	40
Feet,	5	4	4	2	3	16					2	7	18
Toes,	1		1		1								1
AGE GROUPS,	13	14	15	16	17	18	19	20	21 to 25	26 to 30	31 to 35	36 to 40	41 to 45
Number,	1	2	5	19	40	70	53	45	252	292	315	327	268
Total—year 1919,	278	436	639	191	70	750		9		196	327	977	343
Total—year 1918,	348	474	782	265	77	1,151		17	2	287	361	1,414	467
Total—year 1917,	239	499	737	291	85	922	9	10	8	272	320	958	280
Total—year 1916,	218	401	684	281	74	729	8	15	7	253	180	849	201
Grand total,	1,083	1,810	2,842	1,028	306	3,552	17	51	17	1,008	1,188	4,198	1,291

TABLE NO. 2.—Continued.

Industries.	Nature of Injury.					Sex.		Social Condition.		Number of dependents.	Class.			Total.
	Fractures, sprains and dislocations.	Hernia.	Blood poisoning.	Punctures.	Unclassified.	Male.	Female.	Married.	Single.		Industrial.	Mines and quarries.	Public service.	
BUILDING AND CONTRACTING,	46	1	3		15	127		81	46	60	127			127
Brick, cement and stone work,	1					5		3	2	2	5			5
Building construction,	15		2		7	49		34	15	27	49			49
Electrical construction,					1	1		1		3	1			1
Painting and decorating,	7				1	9		4	5	1	9			9
Paving and road construction,	4	1				9		5	4	3	9			9
Plumbing and heating,	2					3		1	2	2	3			3
Railway construction,					2	3		2	1		3			3
Roofing and sheet metal work,	2					5		4	1		5			5
Structural iron work (erecting),	2					10		5	5	3	10			10
Others of this class,	13		1		4	33		22	11	19	33			33
CHEMICALS AND ALLIED PRODUCTS,	8				13	41	2	31	12	54	43			43
Alcohol,					2	2		1	1	4	2			2
Chemicals,					4	6	2	5	3	9	8			8
Fertilizers,	1					1		1		3	1			1
Glue and gelatin,	1					1		1			1			1
Grease and tallow,						1		1			1			1
Mucilage and paste,					1	1		1			1			1
Oils—crude,	3				1	7		5	2	6	7			7
Oils—refined, kerosene, etc.,	2				3	13		11	2	17	13			13
Paints and varnishes,	1					2		1	1	1	2			2
Powder and other explosives,					2	6		3	3	8	6			6
Wood alcohol and acetate of lime,						1		1		6	1			1

CLAY, GLASS AND STONE PRODUCTS,	8	1	1		13	40		35	5	71	40			40
Brick,	1				6	11		9	2	9	11			11
Cement,	4	1				11		10	1	25	11			11
Glass—cut,			1			1		1		3	1			1
Glass—plate,	1				1	5		4	1	7	5			5
Lime,	1					4		3	1	6	4			4
Pottery, terra cotta and fire clay products,	1				6	8		8		21	8			8
CLOTHING MANUFACTURE,	1		1		2	6	2	6	2	1	8			8
Clothing—men's,						1		1			1			1
Clothing—women's and children's,						1	1	1	1		2			2
Hosiery and knit goods,					2	3		2	1	1	3			3
Shirts,	1					1		1			1			1
Shirt waists,			1				1	1			1			1
FOOD AND KINDRED PRODUCTS,	5	1	1	1	2	26		16	10	7	26			26
Bread and other bakery products,	1	1		1		9		4	5	2	9			9
Butter, cheese and condensed milk,	1					3		2	1	3	3			3
Chocolate and cocoa products,					1	2		2			2			2
Confectionery,	1					2		1	1	2	2			2
Flour and grist mill products,	1					3		3			3			3
Ice cream,						1			1		1			1
Ice,						3		3			3			3
Slaughtering and meat packing,			1		1	2		1	1		2			2
Sugar refining,	1					1			1		1			1
LEATHER AND RUBBER GOODS,	1		2	1		10		9	1	14	10			10
Leather—sole,	1					3		2	1	2	3			3
Leather—tanned, curried and finished,			1			4		4		8	4			4
Leather goods,				1		1		1		2	1			1
Trunks and suit cases,						1		1			1			1
Others of this class,			1			1		1		2	1			1
LIQUORS AND BEVERAGES,	2					8		6	2	14	8			8
Liquors—malt,	2					8		6	2	14	8			8
LUMBER AND ITS REMANUFACTURE,	10	1	1	1	2	30	1	22	9	33	31			31
Boxes—cigar,	1					1		1			1			1
Carriages, wagons and parts,					1	1	1	1	1	3	2			2
Furniture,	1		1			3		2	1	2	3			3
Lumber and timber products,	7	1			1	20		14	6	27	20			20
Planing mill products,	1			1		5		4	1	1	5			5

TABLE NO. 2.—Continued.

Industries.	Nature of Injury.					Sex.		Social Condition.		Number of dependents.	Class.			Total.
	Fractures, sprains and dislocations.	Hernia.	Blood poisoning.	Punctures.	Unclassified.	Male.	Female.	Married.	Single.		Industrial.	Mines and quarries.	Public service.	
PAPER AND PRINTING INDUSTRIES,	3		2		5	18	1	7	12	10	19			19
Boxes—fancy and paper,						1			1		1			1
Paper goods—not specified,	1		1		1	7		5	2	7	7			7
Printing and publishing,	1				1	2	1	1	2		3			3
Pulp goods,	1				3	6		1	5	3	6			6
Roofing paper,			1			2			2		2			2
TEXTILES,	3		2		1	18		12	6	15	18			18
Bags—other than paper,						1		1		1	1			1
Carpets and rugs,	1					2		1	1		2			2
Cordage and twine, jute and linen goods,			1			1			1		1			1
Cotton goods,						1			1		1			1
Curtains,	1					1		1		3	1			1
Dyeing and finishing textiles,						2		1	1	1	2			2
Silk and silk goods and throwsters,					1	3		1	2	1	3			3
Waste,						2		2		2	2			2
Wool pulling,						1		1			1			1
Yarns,			1			3		3		6	3			3
Others of this class,	1					1		1		1	1			1
LAUNDRIES,						1			1		1			1
Laundry work,						1			1		1			1
METALS AND METAL PRODUCTS,	114	2	8	9	29	380	3	264	119	423	383			383
Agricultural implements and machinery,						2		2		4	2			2
Automobiles and parts,	1					2		1	1		2			2

Axes and edge tools,				1		1			1		1			1
Axles,						1		1		3	1			1
Babbit metal and solder,						1		1			1			1
Bars—iron and steel,	1					3		2	1	7	3			3
Billets, blooms and slabs,	61		1	6	11	199		131	68	264	199			199
Boilers, tanks and stacks,	2					8		5	3	3	8			8
Bolts, nuts and rivets,	1					1		1			1			1
Brass and bronze products,							1		1		1			1
Cars and car wheels,	1		1			5		3	2	5	5			5
Castings—iron and steel,	3				4	18		13	5	15	18			18
Elevators and hoists,	1				1	2		1	1		2			2
Engines—gas and gasoline,						1		1			1			1
Engines—railroad,	6	1				10		8	2	4	10			10
Engines—stationary,			1			1			1		1			1
Fire arms and ammunition,					1	2	1	2	1	2	3			3
Forgings—iron and steel,					1	9		6	3	14	9			9
Hardware and specialties,	1				1	3		1	2	2	3			3
Ingots—iron and steel,						2		2		6	2			2
Iron—pig,	3					10		7	3	4	10			10
Machinery and parts,	5	1	2	1	1	21		17	4	12	21			21
Machine repair shops,	2		1			3		2	1		3			3
Machine tools,			1		1	2		1	1		2			2
Motors, dynamos, generators, etc.,	3					6		5	1	2	6			6
Pipes and tubing,	3				1	14		12	2	14	14			14
Plates—iron and steel,	2					6		4	2	5	6			6
Plumber's supplies and steam fittings,	1				1	2		2		4	2			2
Railroad supplies,	2		1			6		3	3	4	6			6
Saws,	2					2		2			2			2
Scrap iron and steel,	2					6		4	2	4	6			6
Shapes—structural,	3					5		4	1	3	5			5
Sheets,						3		3		11	3			3
Shovels, scoops and spades,	1					1		1		5	1			1
Silverware and plated ware,						1			1		1			1
Springs,	1					1		1			1			1
Supplies—electrical,						1			1		1			1
Tin and terne plate,						2		2			2			2
Ware—tin and stamped,					1	1		1			1			1
Wire products,	4				4	11	1	9	3	25	12			12
Garages making repairs,	2			1	1	5		3	2	1	5			5
MINES AND QUARRIES,	283	9	3	8	58	1,142		796	346	1,748	32	1,110		1,142
Clay,						1		1		4	1			1
Ore—iron,	1					3		2	1	2	3			3
Sand and gravel,	4				2	9		8	1	10	9			9
Slate—roofing,	1					1		1		4	1			1
Slate—other than roofing,	2					4		3	1	5	4			4
Stone,					1	8		6	2	13	8			8

TABLE NO. 2.—Continued.

Industries.	Nature of Injury.					Sex.		Social Condition.		Number of dependents.	Class.			Total.
	Fractures, sprains and dislocations.	Hernia.	Blood poisoning.	Punctures.	Unclassified.	Male.	Female.	Married.	Single.		Industrial.	Mines and quarries.	Public service.	
Stone—crushed,	1					6		2	4	5	6			6
Coal—anthracite,	147	3	1	2	32	664		464	200	992		664		664
Coal—bituminous,	127	6	2	6	23	446		309	137	713		446		446
PUBLIC SERVICE,	72		4	1	29	477	3	329	151	322			480	480
Repair shops,	7		1		3	46		40	6	38			46	46
Auto transit companies,						1			1				1	1
Canal and navigation companies,	1				4	6		2	4				6	6
Electric light, heat and power companies,	5				3	29		19	10	49			29	29
Gas companies,						1		1					1	1
Gas companies (natural),						1		1		4			1	1
Gas and electric companies,	1					1			1				1	1
Steam railroads,	47		1	1	14	350	1	233	118	181			351	351
Electric railway companies,	6		2		3	31		26	5	41			31	31
Telephone companies,	3				2	8		3	5	2			8	8
Turnpike companies,						1			1				1	1
Water companies,						1		1		5			1	1
Others of this class.	2					1	2	3		2			3	3
TOBACCO AND ITS PRODUCTS,														
MISCELLANEOUS,	51		6	5	18	118	3	74	47	90	121			121
Asbestos products,	1				1	4		3	1	9	4			4
Brooms,	1					1		1			1			1
Coke,	1				1	5		4	1	4	5			5
Junk—paper, rags, etc.,	1					1		1			1			1
Oil cloth and linoleum,						1			1		1			1
Optical goods,				1		1			1		1			1
Photographic apparatus and supplies,	1					1			1		1			1

Plants and flowers,	1					2			2		2			2
Ship and boat building,	38		3		9	64		32	32	61	64			64
Upholstering,						1		1			1			1
Oil well supplies,					1	2		2		2	2			2
Others of this class,	7		3	4	6	35	3	30	8	14	38			38
HOTELS AND RESTAURANTS,	5			1		8	2	6	4		10			10
MERCANTILE,	7		2	1	3	27	2	18	11	11	29			29
JOBBERS AND WAREHOUSES,	4		1		1	17		12	5	10	17			17
MUNICIPALITIES,	12	1		6	9	54	2	46	10	54			56	56
PART INJURED,	635	16	37	34	200	2,548	21	1,770	799	2,937	923	1,110	536	2,569
Trunk,	176	16	3	26	199	1,606	14	1,122	498	1,947	515	749	356	1,620
Head and face,	349		1	6	1	632	5	437	200	772	273	256	108	637
Eyes,														
Arms,	5		3	1		30		19	11	25	16	9	5	30
Hands,	1		7	1		26		21	5	22	15	5	6	26
Fingers,	1		16			23		19	4	17	17	2	4	23
Legs,	96		5			194	2	121	75	121	69	77	50	196
Feet,	6		1			34		30	4	30	15	12	7	34
Toes,	1		1			3		1	2	3	3			3
AGE GROUPS,	46 to 50	51 to 55	56 to 60	61 to 65	66 to 70	71 to 75	76 to 80	81 to 85	86 to 90	Not given				
Number,	253	140	122	72	35	22	5	1	1	229				2,569
Total—year 1919,	635	16	37	34	200	2,548	21	1,770	799	2,937	923	1,110	536	2,569
Total—year 1918,	795	22	26	22	296	3,378	25	2,391	1,012	3,282	1,331	1,266	806	3,403
Total—year 1917,	719	21	9	22	743	3,012	60	2,197	875	1,647	1,267	1,179	626	3,072
Total—year 1916,	676	10	7	14	733	2,655	15	1,789	881	2,906	1,110	1,112	448	2,670
Grand total,	2,825	69	79	92	1,972	11,593	121	8,147	3,567	10,772	4,631	4,667	2,416	11,714

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FATAL ACCIDENTS BY COUNTIES.

Counties.	1919.	1918.	1917.	1916.	Total.
Adams,	1	1			2
Allegheny,	364	618	502	397	1,881
Armstrong,	25	45	24	25	119
Beaver,	31	46	50	17	144
Bedford,	5	14	8	7	34
Berks,	32	32	45	25	134
Blair,	32	37	34	31	134
Bradford,	6	6	6	6	24
Bucks,	27	35	14	1	77
Butler,	12	10	20	22	64
Cambria,	97	124	104	105	430
Cameron,	3	9	8	25	45
Carbon,	29	35	18	22	104
Centre,	4	14	7	13	38
Chester,	39	27	28	23	117
Clarion,	7	12	5	3	27
Clearfield,	25	36	36	32	129
Clinton,	7	13	6	11	37
Columbia,	10	13	11	5	39
Crawford,	5	11	8	7	31
Cumberland,	6	10	4	10	30
Dauphin,	36	74	58	62	230
Delaware,	66	130	115	42	353
Elk,	14	14	3	13	44
Erie,	20	37	33	36	126
Fayette,	122	148	135	101	506
Forest,	1	4	3	2	10
Franklin,	6	5	4	4	19
Fulton,					
Greene,	10	9	13	3	35
Huntingdon,	16	9	11	10	46
Indiana,	40	52	52	86	230
Jefferson,	10	33	23	12	78
Juniata,	4	2		5	11
Lackawanna,	159	169	178	147	653
Lancaster,	19	13	17	26	75
Lawrence,	19	19	38	21	97
Lebanon,	7	14	19	13	53
Lehigh,	24	33	29	21	107
Luzerne,	314	299	255	278	1,146
Lycoming,	10	21	14	14	59
McKean,	11	4	12	8	35
Mercer,	21	39	33	21	114
Mifflin,	18	16	14	16	64
Monroe,	4	1	2	3	10
Montgomery,	33	50	53	63	199
Montour,			2		2
Northampton,	58	77	85	87	307
Northumberland,	64	77	59	65	265
Perry,	5	10	1	4	20
Philadelphia,	255	342	355	314	1,266
Pike,		2		5	7
Potter,	2	2	2	6	12
Schuylkill,	147	167	182	163	659
Snyder,				1	1
Somerset,	52	41	33	30	156
Sullivan,	5	2	1	3	11
Susquehanna,	6	8	5	6	25
Tioga,	5	6	6	8	25
Union,		3	2	1	6
Venango,	11	14	12	10	47
Warren,	6	10	8	5	29
Washington,	67	135	120	62	384
Wayne,	4	3	4	6	17
Westmoreland,	119	144	129	88	480
Wyoming,	1	2		1	4
York,	11	15	14	11	51
Total,	2,569	3,403	3,072	2,670	11,714

TABLE NO. 3.

This table shows All Industrial Accident cases reported to the Workmen's Compensation Bureau during the year 1919 classified by County to Degree and Class of Industry with totals for the years 1918, 1917 and 1916, also showing the number of Industrial Accident cases by Counties for these years.

TABLE NO. 3.

County.	Degree of Accident.			Class of Industry.			Total 1919.	Total 1918.	Total 1917.	Total 1916.	Grand Total.
	Fatal.	Serious.	Minor.	Industrial.	Mines.	Public Service.					
Adams,	1	32	82	108	----------	7	115	92	154	152	513
Allegheny,	364	6,071	19,344	17,823	2,742	5,214	25,779	32,672	40,446	52,240	151,137
Armstrong,	25	402	965	788	532	72	1,392	1,683	2,042	2,098	7,215
Beaver,	31	480	1,803	1,835	22	457	2,314	3,150	3,902	4,251	13,617
Bedford,	5	107	156	124	91	53	268	302	389	360	1,319
Berks,	32	781	2,218	2,041	----------	990	3,031	3,797	5,395	5,671	17,894
Blair,	32	1,093	2,604	451	44	3,234	3,729	4,905	5,911	5,672	20,217
Bradford,	6	254	600	327	6	527	860	801	1,185	1,133	3,979
Bucks,	27	235	641	638	----------	265	903	1,191	939	852	3,885
Butler,	12	294	907	846	162	205	1,213	2,275	2,935	3,129	9,552
Cambria,	97	2,032	4,258	2,587	3,172	628	6,387	7,915	9,060	8,780	32,142
Cameron,	3	27	52	35	2	45	82	292	292	922	1,588
Carbon,	29	351	940	314	801	205	1,320	1,558	2,007	2,619	7,504
Centre,	4	137	316	226	167	64	457	483	550	537	2,027
Chester,	39	329	1,072	1,206	----------	234	1,440	1,814	2,733	2,933	8,920
Clarion,	7	127	170	98	162	44	304	438	413	324	1,479
Clearfield,	25	508	1,072	525	901	179	1,605	1,946	2,320	2,258	8,129
Clinton,	7	185	781	247	48	678	973	1,119	1,326	1,282	4,700
Columbia,	10	213	736	650	265	44	959	1,044	1,407	1,914	5,324
Crawford,	5	132	416	346	----------	207	553	562	752	839	2,706
Cumberland,	6	171	616	219	----------	574	793	973	703	804	3,273
Dauphin,	36	844	2,422	1,557	237	1,508	3,302	4,142	4,995	4,778	17,217
Delaware,	66	1,258	1,917	3,035	----------	206	3,241	4,456	3,520	3,361	14,578
Elk,	14	158	472	521	66	57	644	722	826	917	3,109
Erie,	20	621	1,979	2,223	----------	397	2,620	3,429	4,211	5,465	15,725
Fayette,	122	1,295	4,171	649	4,627	312	5,588	6,796	7,851	8,052	28,287
Forest,	1	40	71	102	----------	10	112	84	121	110	427
Franklin,	6	146	356	392	----------	116	508	609	748	802	2,667
Fulton,	----------	9	10	16	----------	3	19	11	18	25	73
Greene,	10	110	338	131	287	40	458	490	306	175	1,429
Huntingdon,	16	135	465	347	116	153	616	651	921	939	3,127
Indiana,	40	522	1,015	300	1,163	114	1,577	1,765	2,202	2,341	7,885
Jefferson,	10	255	401	253	353	60	666	863	1,023	957	3,509
Juniata,	4	34	43	18	----------	63	81	51	122	127	381
Lackawanna,	159	1,067	5,531	1,071	5,008	678	6,757	7,790	9,032	9,236	32,815
Lancaster,	19	406	1,231	1,355	----------	301	1,656	1,776	2,131	2,072	7,635

Lawrence,	19	307	1,020	1,022	23	301	1,346	1,642	2,597	2,719	8,304
Lebanon,	7	192	659	783	----------	75	858	1,461	1,627	1,721	5,667
Lehigh,	24	336	1,127	1,288	----------	199	1,487	2,025	3,126	3,277	9,915
Luzerne,	314	1,681	8,148	1,201	8,472	470	10,143	11,285	12,298	11,874	45,600
Lycoming,	10	297	743	783	7	260	1,050	1,208	1,656	1,666	5,580
McKean,	11	202	515	632	2	94	728	886	1,074	1,108	3,796
Mercer,	21	476	1,538	1,615	104	316	2,035	2,882	3,816	4,022	12,755
Mifflin,	18	95	334	364	----------	83	447	934	1,386	1,194	3,961
Monroe,	4	59	95	136	----------	22	158	158	238	278	832
Montgomery,	33	567	1,626	1,930	----------	296	2,226	2,699	3,747	4,136	12,808
Montour,	----------	28	58	74	----------	12	86	106	124	100	416
Northampton,	58	603	2,326	2,684	----------	303	2,987	4,311	5,187	7,013	19,498
Northumberland,	64	1,145	1,855	755	1,720	589	3,064	3,114	3,769	3,747	13,694
Perry,	5	68	111	45	----------	139	184	202	267	243	896
Philadelphia,	255	5,397	14,570	16,559	----------	3,663	20,222	22,793	32,465	43,604	119,084
Pike,	----------	15	32	33	----------	14	47	47	41	63	198
Potter,	2	82	219	244	----------	59	303	292	345	336	1,276
Schuylkill,	147	2,163	3,156	517	4,409	540	5,466	6,077	7,524	7,549	26,616
Snyder,	----------	7	14	19	----------	2	21	21	39	47	128
Somerset,	52	578	1,190	103	1,623	94	1,820	1,888	1,962	1,580	7,250
Sullivan,	5	56	110	66	101	4	171	176	225	196	768
Susquehanna,	6	77	176	37	120	102	259	275	341	332	1,207
Tioga,	5	93	213	173	95	43	311	302	459	309	1,331
Union,	----------	27	36	44	----------	19	63	44	88	74	269
Venango,	11	184	728	698	----------	225	923	881	1,112	1,524	4,440
Warren,	6	117	327	387	----------	63	450	517	632	712	2,311
Washington,	67	1,163	3,304	1,411	2,796	327	4,534	5,697	6,389	5,745	22,365
Wayne,	4	36	123	105	39	19	163	213	312	319	1,007
Westmoreland,	119	1,703	5,560	3,177	3,582	623	7,382	8,790	10,253	9,843	36,268
Wyoming,	1	38	55	75	----------	19	94	86	90	204	474
York,	11	289	894	1,062	----------	132	1,194	1,185	1,803	1,954	6,136
Total—1919,	2,569	38,942	111,033	81,426	44,067	27,051	152,544	184,844	227,880	255,616	820,884
Total—1918,	3,403	53,783	127,658	101,038	50,213	33,593	184,844	----------	----------	----------	----------
Total—1917,	3,072	81,769	143,039	133,941	55,128	38,811	227,880	----------	----------	----------	----------
Total—1916,	2,670	59,714	193,232	163,105	54,957	37,554	255,616	----------	----------	----------	----------
Grand total,	11,714	234,208	574,962	479,510	204,365	137,009	820,884	----------	----------	----------	----------

TABLE NO. 4.

Table No. 4 shows the number of Industrial Accident cases reported to the Workmen's Compensation Bureau during the year 1919, classified by the various industries of the Industrial Code to Degree and Nationality.

TABLE NO. 4.

Industry.	Degree.				Nationality.												
	Fatal.	Serious.	Minor.	Total.	United States.	Ireland.	England, Wales, Scotland.	Germany.	Italy.	Austria-Hungary.	Poland.	Russia.	Slavish.	Scandinavian.	Other.	Negro.	Not given.
BUILDING AND CONTRACTING,	127	2,274	5,808	8,209	4,390	132	109	76	678	267	164	84	76	72	987	317	857
Brick, cement and stone work,	5	65	279	349	141	5	6	3	68	12	5	2	3	5	63	10	26
Building construction,	49	980	2,493	3,522	1,925	45	47	31	270	92	53	32	27	34	433	148	385
Electrical construction,	1	42	168	211	175		2	1		3				2		1	27
Painting and decorating,	9	98	149	256	175	1	1	10	5	1	3	5		2	3	17	33
Paving and road construction,	9	120	212	341	153	2	5	2	38	5	5	2	8	1	56	11	53
Plumbing and heating,	3	130	301	434	328	7	9	1	25	2	4	1	1		11	7	38
Railway construction,	3	56	127	186	67	5	1	1	19	27	4	2	3	2	14	24	17
Roofing and sheet metal work,	5	95	294	394	269	12	10	10	8	2	12	2	2	2	20	9	36
Structural iron work (erecting),	10	142	277	429	284	4	6	3	19	21	12	10	6	2	10	23	29
Unclassified,	33	546	1,508	2.087	873	51	22	14	226	102	66	28	26	22	377	67	213
CHEMICALS AND ALLIED PRODUCTS,	43	613	1,618	2,274	1,361	64	39	27	158	67	82	37	15	12	183	97	132
Alcohol,	2	1	6	9	2			1	2	1			1		1	1	
Charcoal,		5	4	9	4	1			1		1				1	1	
Chemicals,	8	161	485	654	345	12	12	4	60	31	40	16	7	2	34	63	28
Cleansing and polishing preparations,			5	5	3				1								1
Dyestuffs and extracts,		6	29	35	17	2	1								10	4	1
Fertilizers,	1	22	143	166	79	2		1	12	2	7	2	1		48	1	11
Fireworks,																	
Flavoring preparations,		1		1	1												
Gasoline,		3	2	5	3	1											1
Glue and gelatin,	1	10	28	39	14	1		1	4	3	5		1		6	2	2
Graphite and graphite refining,		1	2	3	2										1		
Grease and tallow,	1	3	22	26	10	2	3	4	2						3	1	1
Ink—printing,		5	4	9	4										4		1
Ink—writing,		1		1	1												
Malt and yeast,		3	7	10	5		1	1		1							2
Matches,		5	3	8	6												2

Mucilage and paste,	1		1	2	2												
Oils—crude,	7	105	128	240	202		4	2	1	2				1	1		27
Oils—essential,		2	2	4	3											1	
Oils—linseed,			1	1							1						
Oils—lubricating,		4	12	16	7				1		1				4		3
Oils—refined, kerosene, etc.,	13	184	377	574	379	27	11	7	37	8	8	11	2	6	36	13	29
Oils—not specified,		9	40	49	28	1	2		2	1	3	1		2	5		4
Paints and varnishes,	2	37	142	181	89	8	2	2	20	12	5	4	1	1	21	7	9
Patent and proprietary medicines,		2	3	5	2				1							1	1
Powder and other explosives,	6	20	16	42	27	1		1	6	3							4
Soap,		10	96	106	76	5	2		2		6	3			8	1	3
Sulphuric, nitric and mixed acids,		1	11	12	6				4		1		1				
Tar,		1	29	30	25			1			4						
Toilet preparations,		1		1													1
Turpentine and rosin,			1	1		1											
Wood alcohol and acetate of lime,	1	9	16	26	15		1	2	2	3			1			1	1
Unclassified,		1	3	4	4												
CLAY, GLASS AND STONE PRODUCTS,	40	750	3,452	4,242	2,110	17	27	41	425	530	151	72	211	25	260	199	174
Artificial stone,		5	23	28	12			1	3	3	2	1			4	1	1
Brick,	11	202	828	1,041	657	1	5	5	85	63	13	12	19	4	88	45	44
Cement,	11	130	696	837	295		1	4	85	312	25	17	45		18	29	6
Crucibles,		3	4	7	3					2	1					1	
Emery and other abrasive wheels,		1	11	12	9			1			1					1	
Glass bottles,		43	214	257	191	1	2	2	14		12		6		13	2	14
Glass—cut,	1	12	32	45	32		1		4	2						2	4
Glass—decorative,		4	70	74	47	1	1	2			5		1	1	2	2	12
Glass—plate,	5	131	653	789	274	4	3	13	57	99	52	32	111	4	65	64	11
Glass—table ware,		17	132	149	73		2	1	25	10	8	1	11		2	9	7
Glass—window,		67	369	436	212	8	9	1	68	9	20	7	5	11	32	21	33
Grindstones,																	
Hones and whetstones,																	
Lamps and chimneys,		14	13	27	3			1	2	2	1	1	3		1	2	11
Lime,	4	23	58	85	39				19	7	7	1			5		7
Mantels and tile,		3	9	12	9				1								2
Marble and granite work,		15	42	57	26		2	3	11		1			2	3	2	7
Mirrors,		5	22	27	22			2						1		2	
Paving material,		3	3	6	2	1				1						1	1
Pottery, terra cotta and fire clay products,	8	70	267	345	198	1	1	5	50	20	3		10	2	27	14	14
Wall plaster,			3	3	2				1								
Unclassified,		2	3	5	4											1	
CLOTHING MANUFACTURE,	8	186	722	916	559	16	8	19	76	11	13	23	4	1	16	100	70
Clothing—men's,	1	27	87	115	48	3	1	2	14	1	2	4			2	26	12
Clothing—women's and children's,	2	20	60	82	34	1	1	1	2		1	3			3	31	5
Corsets,			8	8	7										1		
Fur goods,		3	1	4	1							1				1	1

TABLE NO. 4—Continued.

Industry.	Degree.			Total.	Nationality.												
	Fatal.	Serious.	Minor.		United States.	Ireland.	England, Wales, Scotland.	Germany.	Italy.	Austria-Hungary.	Poland.	Russia.	Slavish.	Scandinavian.	Other.	Negro.	Not given.
Furnishing goods—not specified,	------	1	1	2	1	------	------	------	------	------	------	------	------	------	1	------	------
Gloves—other than leather,	------	1	36	37	35	------	------	------	1	------	------	------	------	------	------	------	1
Hats and caps—other than straw,	------	28	100	128	44	4	2	4	46	6	1	4	------	1	3	13	------
Hats—straw,	------	1	3	4	2	------	------	------	1	------	------	------	------	------	------	------	1
Hosiery and knit goods,	3	53	259	315	256	3	3	7	4	1	6	4	2	------	2	9	18
Ladies' skirts,	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------
Millinery,	------	1	8	9	5	------	------	------	2	------	------	1	------	------	------	1	------
Neckwear,	------	1	3	4	4	------	------	------	------	------	------	------	------	------	------	------	------
Overalls,	------	2	16	18	11	------	------	------	1	------	1	------	------	------	------	4	1
Shirts,	1	18	54	73	41	2	------	2	2	2	1	1	------	------	1	9	12
Shirt waists,	1	6	16	23	5	------	------	------	2	------	------	2	------	------	1	6	7
Suspenders,	------	2	7	9	3	------	------	------	------	------	------	------	------	------	1	------	5
Underwear,	------	22	62	84	61	3	1	3	1	1	1	3	2	------	1	------	7
Unclassified,	------	------	1	1	1	------	------	------	------	------	------	------	------	------	------	------	------
FOOD AND KINDRED PRODUCTS,	26	891	2,302	3,219	2,038	31	29	82	135	118	78	65	16	11	181	156	279
Baking powder,	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------
Bread and other bakery products,	9	205	405	619	367	7	8	24	34	19	16	8	2	2	37	38	57
Butter, cheese and condensed milk,	3	78	140	221	163	2	2	1	2	2	2	1	1	------	15	6	24
Canned and preserved goods,	------	59	115	174	111	2	3	4	9	14	6	------	1	1	5	12	6
Chocolate and cocoa products,	2	48	269	319	249	2	2	3	28	1	------	1	1	------	9	12	11
Coffee and spices—roasting, etc.,	------	9	9	18	12	------	------	------	------	------	------	1	------	------	------	------	5
Confectionery,	2	63	194	259	181	1	5	1	20	1	3	------	------	1	18	14	14
Cordials and syrups,	------	------	1	1	1	------	------	------	------	------	------	------	------	------	------	------	------
Flour and grist mill products,	3	52	85	140	114	------	1	2	5	1	------	2	------	------	8	------	7
Ice cream,	1	75	181	257	172	1	3	1	6	4	1	------	------	1	16	14	38
Glucose and starch,	------	1	1	2	1	------	------	------	------	------	------	------	------	------	1	------	------
Ice,	3	105	268	376	238	5	5	7	17	9	15	------	5	2	32	11	30
Molasses,	------	3	12	15	12	------	------	2	------	------	------	------	------	------	1	------	------
Slaughtering and meat packing,	2	144	438	584	309	3	------	35	6	51	26	5	5	4	22	36	82

Sugar refining,	1	47	160	208	94	6		1	6	15	9	47			15	11	4
Vinegar and cider,			8	8	2			1	2	1			1				1
Unclassified,		2	16	18	12	2									2	2	
LEATHER AND RUBBER GOODS,	10	303	1,342	1,655	1,158	13	17	18	104	43	96	17	29	15	19	65	61
Belting and hose,		8	37	45	29		2		5	1	4				3		1
Boots and shoes,		51	175	226	187	1	2		13	2	2		1		1	6	11
Boots and shoes—rubber,		7	36	43	32	1		2	2		1				2	2	1
Gloves—leather,																	
Hides and skins,		7	20	27	20			3							2	1	1
Leather—sole,	3	55	114	172	127		1	1	16	2	11	3	2	1	2	3	3
Leather—tanned, curried and finished,	4	88	565	657	417	5	3	6	36	31	66	9	25	13	5	29	12
Leather goods,	1	4	35	40	30		1		1	1	1		1			5	
Rubber goods—not specified,		66	330	396	303	5	8	6	30	5	11	3		1	2	10	12
Trunks and suit cases,	1	13	26	40	7	1				1		2			2	8	19
Unclassified,	1	4	4	9	6				1							1	1
LIQUORS AND BEVERAGES,	8	169	512	689	419	17	8	78	29	34	15	3	8	3	12	13	50
Carbonated beverages,		39	86	125	76	3	1	4	3	1	5				10	8	14
Liquors—distilled,		9	16	25	19					2	1	1			1		1
Liquors—malt,	8	116	392	516	306	13	7	74	25	31	9	2	8	3	1	5	32
Liquors—vinous,		2	3	5	4				1								
Table waters,		2	10	12	10	1											1
Unclassified,		1	5	6	4												2
LUMBER AND ITS REMANUFACTURE,	31	974	2,145	3,150	2,359	22	53	55	77	90	60	9	19	26	60	63	257
Barrels, kegs and tanks,		15	27	42	30		1						1		3	5	2
Beds and cots,		1		1	1												
Billiard tables and supplies,			1	1				1									
Bobbins and spools,		3	32	35	21		1	1			2	1		1	2	1	5
Boxes—cigar,	1	11	36	48	43												5
Boxes—packing,		44	110	154	91	1	1	7	2	1	7		2		9		33
Carriages, wagons and parts,	2	27	85	114	87	2		2	1	2	4				2	4	10
Children's carriages, sleds, etc.,		2	19	21	12	1	1		1	1	3					1	1
Cooperage, etc.,		26	48	74	50	1		2	5	4	1	2	1	1		1	6
Furniture,	3	157	492	652	494	1	18	12	29	13	7	2	2	6	6	22	40
Lasts,		3	6	9	6	1											2
Lumber and timber products,	20	468	649	1,137	881	7	18	11	18	55	8		9	14	12	6	98
Models and patterns—not paper,		3	10	13	9						1		1				2
Planing mill products,	5	158	432	595	452	5	10	11	16	9	5	2	2	1	24	13	45
Refrigerators and ice boxes,		10	24	34	23			3	1	1						3	3
Washing machines and wringers,		10	49	59	34	1		1	1		20			1		1	
Wood—turned and carved,		14	65	79	61	1		2	1	3	2			2	1	4	2
Wood novelties,		17	43	60	50	1	2	1		1		2				2	1
Unclassified,		5	17	22	14		1	1	2				1		1		2

TABLE NO. 4—Continued.

Industry.	Degree.			Total.	Nationality.												
	Fatal.	Serious.	Minor.		United States.	Ireland.	England, Wales, Scotland.	Germany.	Italy.	Austria-Hungary.	Poland.	Russia.	Slavish.	Scandinavian.	Other.	Negro.	Not given.
PAPER AND PRINTING INDUSTRIES,	19	420	1,458	1,897	1,364	13	8	17	143	11	55	10	12	6	54	66	138
Bags—paper,		4	3	7	5			1					1				
Boxes—fancy and paper,	1	65	201	267	213	1	2	5	7	5	5	1			2	8	18
Cardcutting and designing,		1	1	2						1						1	
Electrotyping, engraving and dyesinking,		4	13	17	15					1					1		
Labels and tags,		1	4	5	4	1											
Paper goods—not specified,	7	52	335	394	269	2		2	34	1	15		2	1	21	12	35
Photo engraving,		2	5	7	6							1					
Printing and publishing,	3	159	488	650	498	3	4	6	24		3	3	3	2	15	26	63
Pulp goods,	6	93	222	321	201	1		2	59	2	15	1	3	1	9	14	13
Roofing paper,	2	15	100	117	77	3	1		10	1	9	4	2	1	3	1	5
Sand and emery paper and cloth,		3	9	12	5	1					6						
Stationery goods—not specified,		11	34	45	33		1		3		1		1	1	2	1	2
Stereotyping and electrotyping,		2	5	7	6												1
Wall paper,		7	22	29	21			1	2		1				1	2	1
Unclassified,		1	16	17	11	1			4							1	
TEXTILES,	18	485	1,581	2,084	1,375	38	79	37	128	34	110	16	14	1	26	41	185
Bags—other than paper,	1	8	8	17	11				1					1	2	1	1
Blankets, flannels, etc.,		6	26	32	18	3	3		2		5	1					
Braids, tapes and binding,		10	32	42	28		1	1	2			1				1	8
Carpets and rugs,	2	54	134	190	113	6	22	2	10	2	3	1			2	2	27
Cordage and twine, jute and linen goods,	1	20	50	71	52				4	2	3				6	2	2
Cotton goods,	1	33	87	121	84	1	6	5	3		10	1			1	5	5
Curtains,	1	11	26	38	23		10				1						4
Dyeing and finishing textiles,	2	44	118	164	103	2	5	2	13	4	6	2			4	7	16
Haircloth,		3	19	22	15			1			2						4
Hammocks,		1	4	5	5												
Handkerchiefs and embroideries,		5	27	32	22	1		1		1			1			1	5

Horse blankets and robes,																	
Shoddy,		5	2	7	5	1				1							
Silk and silk goods and throwsters,	3	132	600	735	542	4	18	18	27	11	31	5	11		3	11	54
Thread,		4	5	9	5	2			1		1						
Towels,		1	11	12	10		1										1
Waste,	2	13	20	35	15	4	1	1	2	2	4				2		4
Wool pulling,	1	3	17	21	9			1	2		1	1				2	5
Woolen, worsted and felt goods,		62	185	247	151	5	7	4	17	6	16	4			5	5	27
Yarns,	3	63	195	261	152	8	2	1	44	5	27		2		1	2	17
Unclassified,	1	7	15	23	12	1	3									2	5
LAUNDRIES,	1	51	101	153	106	4	1	2	1		1	1	1		18	4	14
Laundry work,	1	49	100	150	104	4	1	1	1		1	1	1		18	4	14
Unclassified,		2	1	3	2			1									
METALS AND METAL PRODUCTS,	383	9,375	30,800	40,558	20,751	467	434	519	2,556	3,156	2,264	1,074	1,964	165	2,143	3,516	1,549
Agricultural implements and machinery,	2	22	57	81	65		2	2		1	1			1	1		8
Aluminum and its products,		17	91	108	35	1	1	2	7	4	12	2	6	1	2	10	25
Automobiles and parts,	2	121	458	581	426	9	6	3	23	9	13	5	3	1	10	22	51
Axes and edge tools,	1	23	97	121	65	1	2	3	5	1	13	16			1	4	10
Axles,	1	23	59	83	65	1	1	2	1	1	4	3	1	2		1	1
Babbit metal and solder,	1			1											1		
Bars—lead and lead sheet,		1		1	1												
Bars—iron and steel,	3	121	564	688	450	3	3	8	36	41	41	18	17		33	20	18
Beds and bed springs,		8	11	19	6		1			1	1				1	3	6
Bicycles, motorcycles and parts,		2	13	15	13				1	1							
Billets, blooms and slabs,	199	3,337	8,610	12,146	4,695	154	133	103	718	1,362	691	376	1,239	39	988	1,500	208
Boilers, tanks and stacks,	8	112	657	777	476	8	8	10	38	40	81	8	8	7	9	25	59
Bolts, nuts and rivets,	1	95	474	570	334	15	12	14	34	29	43	18	12	1	16	28	14
Brass and bronze products,	1	48	224	273	170	3	6	11	19	9	7	6	4	1	16	11	10
Cars and car wheels,	5	472	1,616	2,093	1,088	13	6	13	145	149	120	174	135	3	52	177	23
Castings—iron and steel,	18	553	2,015	2,586	1,228	19	25	37	235	242	192	47	54	8	194	171	134
Chains,		23	109	132	105	1	2	3	2	3			3	1	2	5	5
Cornices, ceilings, ventilators, etc.,			2	2	2												
Cutlery,		8	35	43	30				2	1	5		1		2	1	1
Elevators and hoists,	2	21	73	96	71	2		3	6	3	3	1		1		1	5
Engines—gas and gasoline,	1	35	154	190	118			1	12	2	5			2	2	1	47
Engines—railroad,	10	364	206	580	290	38	6	14	35	28	46	51	3	4	18	40	7
Engines—stationary,	1	35	264	300	180	5	2	7	11	22	21	3	5	1	2	30	11
Engines—traction,			1	1	1												
Ferro alloys,		10	51	61	40		1	1	6	2		1	1		6	2	1
Files,		2	42	44	21			2	4	6	4	3			1	1	2
Fire escapes,		3	3	6	3					1			1				1
Fire arms and ammunition,	3	63	222	288	203	1	1	1	9	6	4	8	3	2	6	12	32
Fixtures—gas and electric, lamps and reflectors,		12	39	51	20	1		5	1	4	1	4	1		4	3	7
Forgings—iron and steel,	9	151	574	734	434	10	5	12	28	38	51	6	15	2	27	31	75

TABLE NO. 4—Continued

Industry.	Degree.			Total.	Nationality.												
	Fatal.	Serious.	Minor.		United States.	Ireland.	England, Wales, Scotland.	Germany.	Italy.	Austria-Hungary.	Poland.	Russia.	Slavish.	Scandinavian.	Other.	Negro.	Not given.
Frogs and switches,	------	2	28	30	24	------	------	------	------	4	1	------	------	------	------	------	1
Hardware and specialties,	3	138	561	702	463	8	6	16	54	13	44	6	7	4	19	10	52
Hoops, bands and cotton ties,	------	34	97	131	40	6	1	1	6	39	2	1	7	------	14	14	------
Horse shoes,	------	6	66	72	47	------	1	1	------	12	------	------	5	------	------	6	------
Ingots—iron and steel,	2	46	73	121	50	------	1	1	14	22	2	------	6	------	6	6	13
Iron—charcoal,	------	1	12	13	6	------	------	------	------	------	------	------	------	------	6	------	1
Iron—pig,	10	101	429	540	259	4	2	4	61	80	15	15	41	------	33	15	11
Iron and steel work—ornamental,	------	18	76	94	60	1	1	2	2	7	5	4	2	------	5	2	3
Instruments—professional and scientific,	------	9	41	50	34	------	2	2	------	2	3	1	------	------	2	1	3
Machinery and parts,	21	509	2,008	2,538	1,791	33	40	41	86	94	64	17	14	22	34	89	213
Machine repair shops,	3	111	315	429	309	4	8	9	22	12	5	3	1	3	3	21	29
Machine tools,	2	57	274	333	242	7	4	12	------	14	14	9	------	2	3	5	21
Meters,	------	8	35	43	30	------	------	------	1	7	2	------	------	------	------	2	1
Motors, dynamos, generators, etc.,	6	136	1,081	1,223	674	9	43	27	79	137	24	28	15	9	63	102	13
Nails and spikes,	------	16	44	60	26	------	------	1	4	5	3	3	2	1	6	8	1
Needles, pins, hooks and eyes,	------	2	20	22	16	1	1	1	1	------	1	------	------	------	------	------	1
Piling—rolled sheet,	------	1	1	2	1	------	------	------	------	------	------	------	------	------	------	------	1
Pipes and tubing,	14	375	919	1,308	599	8	10	29	123	99	123	23	46	9	66	140	33
Plates—iron and steel,	6	104	361	471	275	4	2	6	38	43	17	7	11	------	44	15	9
Plumbers' supplies and steam fittings,	2	69	245	316	175	4	3	7	47	8	16	2	9	1	15	18	11
Pulleys, hangers and bearings,	------	67	220	287	196	16	3	5	16	6	16	7	3	1	7	1	10
Pumps and valves,	------	78	212	290	217	1	5	6	17	5	13	2	3	------	1	12	8
Rails—iron and steel,	------	1	2	3	1	------	------	------	------	------	------	------	2	------	------	------	------
Radiators,	------	29	156	185	108	2	------	1	6	18	14	4	11	------	4	9	8
Railroad supplies,	6	137	761	904	558	3	1	2	23	10	13	1	1	------	37	248	7
Rods—steel, in coils,	------	------	1	1	------	------	------	------	1	------	------	------	------	------	------	------	------
Safes, vaults and locks,	------	15	66	81	67	------	------	2	------	3	3	2	------	------	1	2	1
Saws,	2	18	19	39	24	------	------	------	2	------	2	1	------	1	3	1	5
Scales,	------	4	11	15	9	------	------	1	------	2	1	------	------	------	1	------	1
Scrap iron and steel,	6	81	258	345	143	4	1	4	21	22	39	12	10	1	33	26	29
Shafting—cold rolled, drawn and turned,	------	68	430	498	206	1	4	5	81	50	63	28	22	1	15	20	2

Shapes—structural,	5	159	850	1,014	497	13	4	16	65	182	70	21	26	5	29	60	26
Shapes—other iron and steel,	------	49	127	176	99	1	3	5	8	23	6	3	3	------	9	6	10
Sheets,	3	72	297	372	201	3	1	2	28	25	34	8	21	2	12	13	22
Shovels, scoops and spades,	1	6	32	39	7	------	------	2	------	------	2	------	2	------	------	1	25
Silverware and plated ware,	1	1	5	7	5	------	------	------	------	------	------	------	------	------	------	------	2
Smelting and refining.	------	48	258	306	88	------	------	2	18	49	18	26	27	------	23	50	5
Springs,	1	30	148	179	94	3	2	4	20	13	16	3	2	1	4	15	2
Stoves, heaters and ranges,	------	57	191	248	201	1	------	4	9	1	9	------	2	2	1	5	13
Supplies—electrical,	1	91	247	339	236	8	5	6	20	7	3	5	3	2	5	10	29
Tin and terne plate,	2	297	1,156	1,455	647	4	22	2	155	84	127	32	41	8	57	237	39
Tinners' and roofers' supplies,	------	1	------	1	1	------	------	------	------	------	------	------	------	------	------	------	------
Typefounding,	------	1	8	9	8	------	1	------	------	------	------	------	------	------	------	------	------
Typewriters,	------	6	31	37	33	------	------	------	2	------	1	------	------	------	------	------	1
Ware—tin and stamped,	1	110	291	402	220	13	7	10	34	14	21	12	8	5	7	31	20
Ware—enamel and galvanized,	------	49	300	349	118	2	1	4	20	45	53	9	21	2	28	31	15
Watches, clocks, jewelry, etc.,	------	4	5	9	5	------	------	2	------	------	------	------	------	------	1	------	1
Wire products,	12	115	693	820	270	4	11	5	72	40	35	29	76	4	110	154	10
Garages making repairs,	5	297	607	909	704	14	12	10	19	7	3	------	2	2	38	24	74
Unclassified,	------	59	11	70	37	------	3	2	3	6	2	------	------	------	4	7	6
MINES AND QUARRIES,	1,142	11,609	32,762	45,513	15,256	392	1,128	364	5,159	5,547	6,091	2,181	4,484	135	329	3,588	859
Clay,	1	26	34	61	49	------	2	------	2	1	------	------	2	------	------	2	3
Ore—iron,	3	2	36	41	28	------	1	------	1	1	1	3	1	------	4	------	1
Sand and gravel,	9	47	129	185	125	1	2	5	14	6	2	2	4	1	9	3	11
Slate—roofing,	1	15	59	75	32	------	10	1	8	------	------	------	3	------	------	------	21
Slate—other than roofing,	4	22	105	131	58	1	11	------	24	------	------	------	1	------	2	------	34
Stone,	8	139	491	638	215	3	11	6	176	117	7	10	8	3	23	11	48
Stone—cut,	------	7	5	12	6	------	1	1	2	------	------	------	------	------	1	1	------
Stone—crushed,	6	54	233	293	134	1	------	5	54	40	6	3	3	1	29	9	8
Coal—anthracite,	664	4,961	15,547	21,172	7,962	293	615	126	1,616	1,424	4,149	1,286	1,524	18	5	1,971	183
Coal—bituminous,	446	6,330	16,119	22,895	6,642	93	475	220	3,262	3,958	1,926	877	2,938	112	256	1,590	546
Unclassified,	------	6	4	10	5	------	------	------	------	------	------	------	------	------	------	1	4
PUBLIC SERVICE,	480	7,018	18,527	26,025	19,200	267	122	190	1,527	953	322	215	176	58	767	458	1,770
Repair shops,	46	3,337	9,973	13,356	10,205	122	68	137	960	738	217	146	98	35	241	291	98
Auto transit companies,	1	25	23	49	33	1	------	------	1	------	------	------	------	------	4	3	7
Canal and navigation companies,	6	54	230	290	75	3	2	2	9	2	29	14	------	1	131	4	18
Electric light, heat and power companies,	29	184	632	845	640	9	11	4	70	13	2	3	10	3	41	11	28
Ferry companies,	------	2	------	2	2	------	------	------	------	------	------	------	------	------	------	------	------
Gas companies,	1	51	243	295	166	5	4	1	42	8	12	4	3	------	29	16	5
Gas companies (natural),	1	62	170	233	193	3	2	------	19	1	------	------	1	3	2	2	7
Gas and electric companies,	1	11	36	48	39	------	------	------	6	1	------	1	------	------	------	1	------
Inclined plane companies,	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------
Pipe line companies,	------	10	10	20	18	------	------	1	1	------	------	------	------	------	------	------	------
Municipal sewage treatment works,	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------
Steam heating companies,	------	1	4	5	2	------	------	------	1	------	------	------	------	------	1	------	1
Steam railroads,	351	2,698	5,648	8,697	6,264	48	17	27	282	168	40	29	53	9	205	91	1,464

TABLE NO. 4—Continued

Industry.	Degree.				Nationality.												
	Fatal.	Serious.	Minor.	Total.	United States.	Ireland.	England, Wales, Scotland.	Germany.	Italy.	Austria-Hungary.	Poland.	Russia.	Slavish.	Scandinavian.	Other.	Negro.	Not given.
Electric railway companies,	31	303	1,083	1,417	944	70	11	14	114	16	17	10	11	4	84	21	101
Telephone companies,	8	98	226	332	302	2	3	1	2	1	------	3	------	1	1	6	10
Toll bridge companies,	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------
Turnpike companies,	1	------	------	1	------	------	------	------	------	------	------	------	------	------	------	------	1
Water companies,	1	30	85	116	72	------	1	5	16	3	1	1	------	------	7	3	9
Unclassified,	3	152	164	319	245	4	3	------	4	2	4	4	------	2	21	9	21
TOBACCO AND ITS PRODUCTS,	------	44	98	142	97	3	1	2	8	9	1	1	1	------	8	3	8
Cheroots and stogies,	------	1	------	1	------	------	------	1	------	------	------	------	------	------	------	------	------
Chewing tobacco,	------	2	2	4	3	------	------	------	------	------	------	------	------	------	------	------	1
Cigars,	------	30	84	114	77	3	------	------	8	7	1	1	1	------	8	2	6
Cigarettes,	------	3	7	10	5	------	------	1	------	2	------	------	------	------	------	1	1
Smoking tobacco,	------	4	4	8	7	------	1	------	------	------	------	------	------	------	------	------	------
Unclassified,	------	4	1	5	5	------	------	------	------	------	------	------	------	------	------	------	------
MISCELLANEOUS,	121	1,971	4,165	6,257	4,162	146	88	80	300	126	292	131	32	33	231	273	363
Artificial flowers, plumes and feathers,	------	2	------	2	1	------	------	------	------	------	------	------	------	------	------	------	1
Awnings, tents and sails,	------	6	5	11	9	------	------	------	------	------	------	------	------	------	------	1	1
Asbestos products,	4	42	136	182	113	5	------	------	16	2	5	------	1	------	13	5	22
Baskets, rattan and willow ware,	------	1	5	6	3	------	------	------	------	2	1	------	------	------	------	------	------
Brooms,	1	5	15	21	15	------	------	------	1	2	------	------	------	------	1	1	1
Brushes,	------	2	7	9	7	------	------	------	------	------	------	------	------	------	------	2	------
Buttons,	------	37	68	105	23	------	2	7	3	13	35	1	1	------	9	5	6
Caskets and undertakers' supplies,	------	24	63	87	63	------	------	4	2	2	7	2	------	1	------	1	5
Coke,	5	31	86	122	38	1	1	1	13	27	9	------	14	------	9	4	5
Cork cutting,	------	11	34	45	30	------	------	1	6	1	------	1	1	------	4	------	1
Curled hair,	------	4	11	15	4	------	------	2	------	------	5	------	------	------	1	------	3
Engineering service,	------	4	3	7	7	------	------	------	------	------	------	------	------	------	------	------	------
Fancy articles and specialties,	------	6	------	6	4	------	------	------	------	------	------	------	------	------	------	------	2

Flags, banners, regalias, emblems, etc.,		3	4	7	5			1								1	
Fuel, manufacture,		1		1	1												
Gold and silver leaf and foil,		1	2	3	3												
Hair work,		2	5	7	1				2			1				3	
Handstamps, stencils and brands,		1	8	9	9												
House furnishing goods—not specified,																	
Junk—paper, rags, etc.,	1	25	57	83	35	1	1	2	1		8	6	1		13	5	10
Laboratory service,		1	2	3	3												
Mats and matting,			2	2	2												
Mattresses and bedding,		7	25	32	19			2	1		1	1			1	4	3
Musical instruments—not specified,		4	13	17	15											1	1
Nursery products,		11	14	25	13	3			2						2	1	4
Oil cloth and linoleum,	1	48	115	164	106	4	3	3	13	4	8	1		1	12	3	6
Optical goods,	1	2	17	20	13				1						1	1	4
Packing—steam, etc.,		5	12	17	14	1										1	1
Pens and pencils,			25	25	16		1								1	1	6
Photographic apparatus and supplies,	1	3	3	7	7												
Pianos and organs,		9	27	36	23	2		1	2	1		2			3	1	1
Pipes—tobacco,			1	1	1												
Plants and flowers,	2	20	27	49	37	2	2	3	1	1				1			2
Signs,		4	13	17	10											4	3
Ship and boat building,	64	979	1,912	2,955	2,100	67	37	8	152	40	161	104	4	20	26	163	73
Soda water apparatus,			5	5	3								1				1
Sporting and athletic goods,		2	2	4	2	1											1
Statuary and art goods,																	
Surgical appliances and artificial limbs,		2	6	8	5		1							1	1		
Teeth,		1	9	10	8											1	1
Toys and games,		24	91	115	81	2	1	7	5	4	5	2				1	7
Umbrellas and parasols,		4	20	24	18				2		2	1				1	
Upholstering,	1	3	12	16	8		2	2				1				2	1
Wheelbarrows,		3	4	7	6												1
Window shades and fixtures,																	
Oil well supplies,	2	23	241	266	212	2	1	4	11	6	14	1	2	2		2	9
Unclassified,	38	608	1,058	1,704	1,069	55	36	32	66	21	31	7	7	7	134	58	181
HOTELS AND RESTAURANTS,	10	192	381	583	237	22	16	23	35	3	25	10	7	3	68	62	72
MERCANTILE ESTABLISHMENTS,	29	858	2,001	2,888	1,849	53	58	38	55	22	30	8	16	8	218	100	433
JOBBERS AND WAREHOUSES,	17	307	740	1,064	617	41	15	24	37	18	12	8	5	4	103	55	125
MUNICIPALITIES,	56	452	518	1.026	763	32	14	16	33	6	8		3	3	37	17	94
Fatal,				2,569	1,061	45	47	29	167	211	233	84	115	6	77	164	330
Serious,				38,942	20,470	493	532	478	2,591	2,497	2,386	903	1,704	167	1,308	2,418	2,995
Minor,				111,033	58,640	1,252	1,675	1,201	8,906	8,337	7,251	2,978	5,274	408	4,335	6 611	4,165
Grand total,	2,569	38,942	111,033	152,544	80,171	1,790	2,254	1,708	11,664	11.045	9,870	3,965	7,093	581	5,720	9,193	7,490

TABLE NO. 5.

This compilation shows the number of Industrial Accident cases reported to the Workmen's Compensation Bureau during the year 1919, classified as to the various Nationalities by Degree and Class of Industry.

TABLE NO. 5.

Class of Industry.		Nationality.													
		United States.	Ireland.	England, Scotland, Wales.	Germany.	Italy.	Austria-Hungary.	Poland.	Russia.	Slavish.	Scandinavian.	Other.	Negro.	Not given.	Total.
	Total,	4,390	132	109	76	678	267	164	84	76	72	987	317	857	8,209
Building and contracting,	Fatal,	64	4	1	2	13	7	5	1	--------	1	16	4	9	127
	Serious,	1,171	40	32	25	158	62	31	22	21	19	251	78	364	2,274
	Minor,	3,155	88	76	49	507	198	128	61	55	52	720	235	484	5,808
	Total,	1,361	64	39	27	158	67	82	37	15	12	183	97	132	2,274
Chemicals and allied products,	Fatal,	27	2	1	1	2	3	3	1	--------	--------	1	--------	2	43
	Serious,	374	19	9	7	29	20	19	11	3	3	37	19	63	613
	Minor,	960	43	29	19	127	44	60	25	12	9	145	78	67	1,618
	Total,	2,110	17	27	41	425	530	151	72	211	25	260	199	174	4,242
Clay, glass and stone products,	Fatal,	21	--------	--------	--------	5	7	1	--------	1	--------	1	2	2	40
	Serious,	413	3	3	9	63	74	26	9	31	2	30	25	59	750
	Minor,	1,676	14	24	32	354	449	124	63	179	23	229	172	113	3,452
	Total,	559	16	8	19	76	11	13	23	4	1	16	100	70	916
Clothing manufacture,	Fatal,	6	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	1	1	8
	Serious,	98	3	2	1	12	2	3	9	1	--------	7	22	26	186
	Minor,	455	13	6	18	64	9	10	14	3	1	9	77	43	722

	Total,	2,038	31	29	82	135	118	78	65	16	11	181	156	279	3,219
Food and kindred products,	Fatal,	18			1		1	1	1			1	1	2	26
	Serious,	548	11	8	23	30	20	18	11	4	6	44	46	122	891
	Minor,	1,472	20	21	58	105	97	59	53	12	5	136	109	155	2,362
	Total,	1,158	13	17	18	104	43	96	17	29	15	19	65	61	1,655
Leather and rubber goods,	Fatal,	6				1		1					1	1	10
	Serious,	207	5	2	4	15	7	12	4	7	2	4	9	25	303
	Minor,	945	8	15	14	88	36	83	13	22	13	15	55	35	1,342
	Total,	419	17	8	78	29	34	15	3	8	3	12	13	50	689
Liquors and beverages,	Fatal,	3	1		2	1					1				8
	Serious,	107	3	2	17	7	5	2	2	2	1	4	3	14	169
	Minor,	309	13	6	59	21	29	13	1	6	1	8	10	36	512
	Total,	2,359	22	53	55	77	90	69	9	19	26	60	63	257	3,150
Lumber and its remanufacture,	Fatal,	25					2	1				1	1	1	31
	Serious,	712	3	17	19	27	13	8	3	3	4	10	18	137	974
	Minor,	1,622	19	36	36	50	75	51	6	16	22	49	44	119	2,145
	Total,	1,364	13	8	17	143	11	55	10	12	6	54	66	138	1,897
Paper and printing industries,	Fatal,	13				1	1	1	1					2	19
	Serious,	287	4	1	5	23	3	14	2	3	1	7	20	50	420
	Minor,	1,064	9	7	12	119	7	40	7	9	5	47	46	86	1,458
	Total,	1,375	38	79	37	128	34	110	16	14	1	26	41	185	2,084
Textiles,	Fatal,	8	1	1	1	2		1				1	1	2	18
	Serious,	307	10	21	6	32	10	21	2	1		6	11	58	485
	Minor,	1,060	27	57	30	94	24	88	14	13	1	19	29	125	1,581
	Total,	106	4	1	2	1		1	1	1		18	4	14	153
Laundries,	Fatal,	1													1
	Serious,	33	1		1							7	1	8	51
	Minor,	72	3	1	1	1		1	1	1		11	3	6	101

TABLE NO. 5—Continued

Class of Industry.		Nationality. United States.	Ireland.	England, Scotland, Wales.	Germany.	Italy.	Austria-Hungary.	Poland.	Russia.	Slavish.	Scandinavian.	Other.	Negro.	Not given.	Total.
	Total,	20,751	467	434	519	2,556	3,156	2,264	1,074	1,964	165	2,143	3,516	1,549	40,558
Metals and metal products,	Fatal,	174	14	2	5	25	29	19	13	21	1	25	39	16	383
	Serious,	4,555	140	85	139	519	696	562	271	530	40	476	837	525	9,375
	Minor,	16,022	313	347	375	2,012	2,431	1,683	790	1,413	124	1,642	2,640	1,008	30,800
	Total,	15,256	392	1,128	364	5,159	5,547	6,691	2,181	4,484	135	329	3,588	859	45,513
Mines and quarries,	Fatal,	343	16	34	10	91	145	196	62	88	1	15	101	40	1,142
	Serious,	4,057	82	264	106	1,149	1,324	1,516	475	1,035	48	75	1,049	429	11,609
	Minor,	10,856	294	830	248	3,919	4,078	4,379	1,644	3,361	86	239	2,438	390	32,762
	Total,	19,200	267	122	190	1,527	953	322	215	176	58	767	458	1,770	26,025
Public service,	Fatal,	201	3	4	5	17	10	2	1	4	1	4	3	225	480
	Serious,	5,158	69	25	55	379	217	61	41	34	20	173	121	665	7,018
	Minor,	13,841	195	93	130	1,131	726	259	173	138	37	590	334	880	18,527
	Total,	97	3	1	2	8	9	1	1	1	--------	8	3	8	142
Tobacco and its products,	Fatal,	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------
	Serious,	32	--------	--------	2	2	3	--------	1	--------	--------	2	1	1	44
	Minor,	65	3	1	--------	6	6	1	--------	1	--------	6	2	7	98

	Total,	4,162	146	88	80	300	126	292	131	32	33	231	273	363	6,257
Miscellaneous,	Fatal,	83	--------	2	1	7	3	1	4	1	1	4	7	7	121
	Serious,	1,309	51	28	24	80	23	69	35	14	16	72	88	156	1,971
	Minor,	2,770	95	58	55	207	100	222	92	17	16	155	178	200	4,165
	Total,	237	22	16	23	35	3	25	10	7	3	68	62	72	583
Hotels and restaurants,	Fatal,	3	--------	1	--------	--------	--------	1	--------	--------	--------	4	1	--------	10
	Serious,	85	7	7	6	15	--------	5	--------	2	1	15	15	34	192
	Minor,	149	15	8	17	20	3	19	10	5	2	49	46	38	381
	Total,	1,849	53	58	38	55	22	30	8	16	8	218	100	433	2,888
Mercantile,	Fatal,	17	3	--------	--------	--------	--------	--------	--------	--------	--------	2	1	6	29
	Serious,	519	17	15	11	15	10	8	3	8	2	50	34	166	858
	Minor,	1,313	33	43	27	40	12	22	5	8	6	166	65	261	2,001
	Total,	617	41	15	24	37	18	12	8	5	4	103	55	125	1,064
Jobbers and warehouses,	Fatal,	10	--------	1	1	--------	2	--------	--------	--------	--------	--------	1	2	17
	Serious,	175	13	2	7	13	4	5	2	3	1	25	16	41	307
	Minor,	432	28	12	16	24	12	7	6	2	3	78	38	82	740
	Total,	763	32	14	16	33	6	8	--------	3	3	37	17	94	1,026
Municipalities,	Fatal,	38	1	--------	--------	2	1	--------	--------	--------	--------	2	--------	12	56
	Serious,	323	12	9	11	14	4	6	--------	2	1	13	5	52	452
	Minor,	402	19	5	5	17	1	2	--------	1	2	22	12	30	518
Total,	Fatal,	1,061	45	47	29	167	211	233	84	115	6	77	164	330	2,569
	Serious,	20,470	493	532	478	2,591	2,497	2,386	903	1,704	167	1,308	2,418	2,995	38,942
	Minor,	58,640	1,252	1,675	1,201	8,906	8,337	7,251	2,978	5,274	408	4,335	6,611	4,165	111,033
Grand total,		80,171	1,790	2,254	1,708	11,664	11,045	9,870	3,965	7,093	581	5,720	9,193	7,490	152,544

TABLE NO. 5½.

The following table is a summary of All Accident cases reported to the Workmen's Compensation Bureau during the year 1919, classified by Cause to Class of Industry and Degree, also showing the Nature of Injury—Loss of Parts—Social Condition—Estimated time and wage loss—Sex—etc., by Class of Industry.

TABLE NO. 5½.

CAUSE.	Class of Industry.											
	Building and contracting.	Chemicals and allied products.	Clay, glass and stone products.	Clothing manufacture.	Food and kindred products.	Leather and rubber goods.	Liquors and beverages.	Lumber and its remanufacture.	Paper and printing industries.	Textiles.	Laundries.	Metals and metal products.
MACHINERY—Total,	827	305	443	381	568	520	103	1,126	754	818	52	9,123
Boilers and steam pipes,	1		1	1	1					1	1	13
Boiler explosions,	1		1	1	1					1	1	10
Fatal,												2
Prime movers—Stationary engines and motors,		1				1						
Sudden starting or stopping,												
Fatal,												
Power and transmission apparatus,	103	46	77	21	46	21	4	48	35	85	3	411
Belts and pulleys,	7	18	34	10	17	12	2	28	11	35	3	130
Chains and sprockets,	16	5	5		4	2		10	1	6		65
Cogs, gears, etc.,	30	6	19	6	16	4	1	3	15	37		123
Fly wheels,	6	6	2							1		15
Operating or repairing apparatus (electrical),		2		1					1			13
Operating or repairing apparatus (not electrical),	1		2									4
Ropes, cables and drums,	41	7	13		5	2	1	4	3	2		45
Set screws, keys and bolts,		1			1				1			2
Shafts and couplings,	2	1	2	4	2	1		3	3	4		13
Unguarded or uncovered switches,												1
All others,					1							
Fatal,	1	3	2	1	1			2	2			10

Elevators,	20	14	14	18	57	27	9	15	23	28	1	113
Cable breaking,	1	2		1	1	2		2	1			6
Cable unwinding,		1										1
Cable—caught by,			2		1		2		1	1	1	7
Car—caught by,	6	7	7	14	28	17	1	9	11	21		35
Car—struck by,	2	1	1		3		1		2			4
Counterweight—struck by,						1						4
Defective equipment,												1
Entering or leaving car,	2	1		2	2	1			1			9
Fall of car,	4	1	1	1	3	2		1	2	1		16
Fall of person,	3	1	1		5	3	1	1		3		11
Falling objects,	1						1		2			3
All others,	1		2		14	1	3	2	3	2		16
Fatal,	3	1		2	3	3	2	1		2		6
Cranes, hoisting apparatus, etc.,	253	24	27		33	7		11	9	7		1,744
Cable catching person,	20	5	5		4			2	4			205
Car striking person,	8	3	1							1		63
Cleaning, oiling or repairing,					2	1						5
Falling objects (other than load),	13	2	2			1				1		160
Falls from,	5		1		1	1			1			45
Load falling,	59	5	2		16	2		2	2	2		438
Run over by,	1									1		7
Struck by load or tackle (not falling),	137	7	15		10	2		6	2	2		751
All others,	10	2	1					1				70
Fatal,	8		2					1				64
Working machines,	450	220	324	341	431	464	90	1,052	687	697	47	6,842
Adjusting machine or work,	23	9	20	35	37	30	7	44	95	97	4	490
Breaking of machine or work,	11	11	12	10	7	9	9	24	4	17		178
Cleaning,	7	10	11	15	51	9	1	22	45	68	1	116
Emery wheels (bursting),		1	2					1				50
Flying objects,	171	49	125	7	25	34	13	107	24	63	1	2,433
Oiling,	5	7	10	2	17	2	3	8	11	12		70
Operating or feeding,	83	49	81	247	164	340	22	425	425	340	21	2,700
Repairing,	7	5	15	3	7	5	4	9	9	22		125
Saws,	33	7	19	4	7	8		364	19	9		201
Starting or stopping,	100	61	23	18	107	26	31	38	48	62	20	411
All others,	10	11	6		9	1		10	7	7		68
Fatal,	2	3	1		1	1		5	2	2		39

TABLE NO. 5½—Continued

CAUSE.	Class of Industry.											
	Building and contracting.	Chemicals and allied products.	Clay, glass and stone products.	Clothing manufacture.	Food and kindred products.	Leather and rubber goods.	Liquors and beverages.	Lumber and its remanufacture.	Paper and printing industries.	Textiles.	Laundries.	Metals and metal products.
EXPLOSIVES, ELECTRICITY, FIRES, HOT OR CORROSIVE SUBSTANCES—Total,	291	258	182	33	166	60	69	40	73	85	15	3,468
Corrosive substances,	9	23	6	2	6	9	3	1	5	6		39
Fatal,		1		1			1					
Electricity,	25	9	29	2	5	7	1	5	8	6		326
Cutting or welding,												
Fatal,	5	1	1						2	1		11
Explosives,	72	42	32		29	3	38	13	7	3	1	316
Acetylene,												3
Carbon dioxde,	3		1				1					1
Compressed air,												9
Dust,								2	1			8
Dynamite, powder or nitro-glycerine,	23	6	17									21
Gas,	15	22	10		19	1	4	1	3	2	1	163
Gasoline,	17	7			4	2	2	2				41
Manufacturing or storing,												
Transporting or handling,	2	1										
All others,	12	6	4		6		31	8	3	1		70
Fatal,	12	4	4		2		1	1				17

Hot substances or flames,	185	184	115	29	126	41	27	21	53	70	14	2,787
Asphalt, pitch or tar,	51	10			3	1	7	1	5	2		31
Cutting or welding (not electrical),												1
Flames,	32	42	21	1	9	2	1	5	5	5		291
Hot water (scalds),	52	53	26	21	70	24	16	8	25	59	4	308
Molten metal—explosion of,	1											35
Molten metal or slag (all others),	15	20	4			3	1	3	6		1	1,305
Other hot substances,	31	58	64	7	43	11	2	4	12	4	9	811
All others,	3	1			1							5
Conflagration,												
Fatal,	3	8		1		1	1	1		6		26
FALLING OBJECTS—Total,	1,024	166	490	22	142	83	30	216	91	91	3	3,544
Rock and earth,	140	13	168	1	2	1			1	1		87
Collapse of buildings or walls,	43	3	5		1		1	1	1			29
Collapse of scaffolds or stagings,	158	14	12	1	4		2	6	3	6		64
Collapse of piled up material,	34	9	28	1	24		5	19	5	3		207
Fall of roof (mines),	4	1	16		3	2		2				44
Objects dropped by other persons,	90	12	26	1	16	5		7	9	10		279
Objects falling from trucks or vehicles (not loading or unloading),	33	18	38		12	7	1	25	13	5		354
Objects falling from buildings, trestles or scaffolds,	453	77	169	16	60	63	19	98	53	54	1	2,108
All others,	69	19	28	2	20	5	2	58	6	12	2	372
Fatal,	19	3	5		1			8				34
FALL OF PERSONS—Total,	1,607	358	425	125	534	184	138	319	222	353	27	3,450
From ladder,	258	40	18	7	47	14	22	18	25	42	2	331
From scaffolds or platforms,	300	33	37	4	24	5	8	30	19			261
From vehicles,	173	33	29	3	111	10	33	58	12	11	6	72
From structures in course of erection,	127	1	5		2			4		12		11
From structures (all others),	75	12	15	1	13	3	1	9	2	7		51
From other elevations,	133	50	47	7	42	24	6	41	22	40	2	375
Into excavations,	20	4	11		2			2	2	2		45
Into other openings,	49	17	27	4	18	16	3	12	10	5		235
On level,	416	140	219	70	230	101	48	134	103	193	15	1,906
Stairways,	35	25	11	28	41	8	17	8	27	41	1	123
All others,	21	3	6	1	4	3		3			1	40
Fatal,	32	5	2	1	6			3	3	2		38

TABLE NO. 5½—Continued

CAUSE.	Class of Industry.											
	Building and contracting.	Chemicals and allied products.	Clay, glass and stone products.	Clothing manufacture.	Food and kindred products.	Leather and rubber goods.	Liquors and beverages.	Lumber and its remanufacture.	Paper and printing industries.	Textiles.	Laundries.	Metals and metal products.
HANDLING OF TOOLS OR OBJECTS—Total,	2,635	673	1,808	214	1,197	602	244	1,040	486	443	26	15,262
Carrying or lifting objects (not loading or unloading),	1,684	427	984	103	750	334	154	510	320	284	17	9,712
Chipping or grinding,	15	4	30	3	11	13		20	3	8		899
Handling of sharp objects,	88	31	475	22	77	34	30	60	26	22	1	404
Loading or unloading,	190	41	69	6	85	11	32	90	34	14	1	612
Tools in hands of injured person,	544	156	218	78	243	194	25	339	91	99	7	3,134
Tools in hands of fellow workmen,	114	13	30	2	31	16	3	21	12	16		498
All others,		1	2									3
Fatal,	4		2		1	1	2			2		25
POWER VEHICLES—Total,	596	137	335	12	208	40	47	161	91	31	10	1,874
Collisions,	37	6	19		3			5	2			51
Coupling or uncoupling cars,	11	3	20		2	1		4	2			193
Defective equipment,	2		1									3
Derailment—replacing cars,	12	4	40		2			3		1		51
Fell from, over or into,	53	12	42		16	5	2	27	14	3		267
Improperly loaded ladles or cars,	1				1					10		3
Loading or unloading material,	165	45	81		49	19	11	76	27			648
Not on track,	203	37	26	11	87	9	24	28	32	14	4	232
Struck by car or engine,	102	25	88	1	41	1	9	14	14	2	5	356
Struck by overhead or side obstruction,	4	4	11		3	3	1	2			1	41
Sudden starting or stopping,	1				3	1						3
All others,	5	1	7		1	1		2		1		26
Fatal,	22	5	8		6	3	1	7	5	1	1	80

STEPPING ON SHARP OBJECTS—Total,	558	61	72	14	59	14	12	31	40	54	1	525
Nails,	546	60	45	8	55	14	6	28	33	37		380
All others,	12	1	27	6	4		6	3	7	17	1	145
Fatal,												
RUNNING INTO OR STRIKING AGAINST OBJECTS—Total,	155	53	183	40	109	53	10	69	53	99	5	1,204
Fatal,				1		1				2		
POISONOUS SUBSTANCES—Total,	23	5	7	3	6	11		4	2	9		20
Fatal,												
MISCELLANEOUS—Total,	493	258	297	67	230	88	36	144	85	101	14	2,088
Acids and liquids,	17	106	21	7	20	20	4	5	19	18	2	154
Animals,	109	21	27		92	2	12	32	3	6	3	26
Asphyxiation or suffocation,	10	23	4		8	1		1	3	1		89
Doors, windows or gates (exclusive of elevator gates),	46	12	32	17	35	11	7	9	12	27	6	218
Drowning,	5		8						2			
Flying objects (not from machines, tools or explosives),	164	51	147	13	26	13	3	69	17	9		1,142
Frost bites,	2											1
Heat prostration,	3	1	12		4	1		1	1		1	65
Intentional violence,	10	2	10		6		2	3	4	7		61
Lightning,		5	1		1					1		4
All others,	127	37	35	30	38	40	8	24	24	32	2	328
Fatal,	16	9	13	1	5			2	5			31
NATURE OF INJURY—Total,	8,209	2,274	4,242	916	3,219	1,655	689	3,150	1,897	2,084	153	40,558
Burns and scalds,	309	363	240	46	196	88	41	47	107	115	28	4,374
Crushes and bruises,	3,039	711	1,402	214	1,001	574	233	890	749	638	50	14,604
Cuts and lacerations,	1,715	410	1,553	290	849	507	191	1,352	533	610	14	11,361
Fractures, sprains and dislocations,	2,043	527	715	125	804	265	177	601	344	424	45	7,108
Hernia,	74	27	48	10	31	14	10	25	17	23	4	421
Blood poisoning,	254	91	128	124	203	135	23	119	65	137	8	1,343
Punctures,	700	97	118	100	111	60	11	102	63	121	1	1,090
Unclassified,	75	48	38	7	24	12	3	14	19	16	3	257

TABLE NO. 5½—Continued.

CAUSE.	Class of Industry.											
	Building and contracting.	Chemicals and allied products.	Clay, glass and stone products.	Clothing manufacture.	Food and kindred products.	Leather and rubber goods.	Liquors and beverages.	Lumber and its remanufacture.	Paper and printing industries.	Textiles.	Laundries.	Metals and metal products.
LOSS OF PARTS—Total,	56	16	26	1	29	26	5	92	21	29	2	454
Eyes,	7	1	1				2	6				41
Arms,	2		1		1	2			1	2		11
Hands,	1	2	2		2	3		4	5	5	2	25
Fingers,	35	6	17	1	20	20	2	72	13	19		288
Legs,	4	1								2		14
Feet,	4	3	4		3		1		2			15
Toes,	3	3	1		3	1		10		1		60
SOCIAL CONDITION—Total,	8,209	2,274	4,242	916	3,219	1,655	689	3,150	1,897	2,084	153	40,558
Married,	4,745	1,467	2,504	341	1,786	936	477	1,816	809	937	72	24,165
Single,	2,782	716	1,640	512	1,243	686	195	1,166	976	1,043	69	14,760
Not given,	682	91	98	63	190	33	17	168	112	104	12	1,633
Days lost,	117,913	31,269	48,468	10,670	45,618	18,328	9,541	49,028	24,661	26,593	2,913	505,335
Wage loss (dollars),	539,504	132,355	197,755	32,829	168,038	71,336	38,879	168,415	81,289	86,345	8,464	2,341,434
DEGREE.												
Fatal,	127	43	40	8	26	10	8	31	19	18	1	383
Serious,	2,274	613	750	186	891	303	169	974	420	485	51	9,375
Minor,	5,808	1,618	3,452	722	2,302	1,342	512	2,145	1,458	1,581	101	30,800

SEX.												
Male,	8,184	2,199	4,121	542	2,960	1,550	677	3,069	1,638	1,459	97	40,000
Female,	25	75	121	374	259	105	12	81	259	625	56	558
NUMBER OF DEPENDENTS—Fatal cases,	60	54	71	1	7	14	14	33	10	15	------	423
NUMBER OF DEPENDENTS—Serious cases,	5,845	2,067	4,244	409	2,259	1,265	660	2,203	998	1,031	72	38,891
Total number of dependents,	5,905	2,121	4,315	410	2,266	1,279	674	2,236	1,008	1,046	72	39,314
Total number of accidents—1919,	8,209	2,274	4,242	916	3,219	1,655	689	3,150	1,897	2,084	153	40,558
Total number of accidents—1918,	9,190	3,039	4,727	1,107	2,991	1,424	877	3,118	1,878	2,209	233	57,134
Total number of accidents—1917,	13,384	3,435	7,012	1,652	4,300	1,939	1,453	4,433	2,534	3,145	347	75,131
Total number of accidents—1916,	15,146	5,918	7,179	2,037	5,101	2,329	1,682	4,955	3,514	3,888	436	95,986
Grand total number of accidents,	45,929	14,666	23,160	5,712	15,611	7,347	4,701	15,656	9,823	11,326	1,169	268,809

TABLE NO. 5½—Continued

CAUSE.	Class of Industry.									Degree of Accident.		
	Mines and quarries.	Public service.	Tobacco and its products.	Miscellaneous.	Hotels and restaurants.	Mercantile establishments.	Jobbers and wholesalers.	Municipalities.	Total.	Fatal.	Serious.	Minor.
MACHINERY—Total,	2,812	1,809	34	1,220	61	386	129	52	21,523	278	5,991	15,254
Boilers and steam pipes.	10	19		2	2		1	1	54	18	13	23
Boiler explosions,	10	18		2	2		1	1	50	18	10	22
Fatal,	3	12		1					18			
Prime movers—Stationary engines and motors,	1	2							5		4	1
Sudden starting or stopping,	1	2							3		2	1
Fatal,												
Power and transmission apparatus,	560	101	2	59	1	10	8	4	1,645	38	611	996
Belts and pulleys,	67	16	1	19		1	6		417	6	144	267
Chains and sprockets,	95	14		7		3		1	234	2	96	136
Cogs, gears, etc.,	69	26	1	15	1	3	1	2	378	9	154	215
Fly wheels,	7	5		3					45	3	17	25
Operating or repairing apparatus (electrical).	12	3		1					33	3	8	22
Operating or repairing apparatus (not electrical),		1							8		3	5
Ropes, cables and drums.	298	26		9		3	1		460	8	157	295
Set screws, keys and bolts,	1								6		3	3
Shafts and couplings,	10	5		5				1	56	4	29	23
Unguarded or uncovered switches,		5							6	2		4
All others,	1								2	1		1
Fatal,	10	4		1			1		38			

Elevators,	51	42	5	57	12	67	33	7	613	46	219	348
Cable breaking,	2	1		1			2		22		15	7
Cable unwinding,						1			3			3
Cable—caught by,		1				3	1		20	2	7	11
Car—caught by,	16	12	2	25	6	26	11	2	256	20	86	150
Car—struck by,	4	3		2	2	3		1	29	1	4	24
Counterweight—struck by,			1			1			7		4	3
Defective equipment,	1	1							3		2	1
Entering or leaving car,	1	5		6		8	2		40	1	14	25
Fall of car,	21	5	1	3	1	4	5	1	73	10	34	29
Fall of person,	1	7		9	1	9	6	3	65	10	35	26
Falling objects,		3				2			12		5	7
All others,	5	4	1	11	2	16	6		83	2	13	68
Fatal,	6	2		4	3	5	2	1	46			
Cranes, hoisting apparatus, etc.,	70	217		144	1	6	6		2,559	96	906	1,557
Cable catching person,	11	8		10		1	1		276		113	163
Car striking person,	2	1		3		1			83	15	36	32
Cleaning, oiling or repairing,	2	2		1					13		4	9
Falling objects (other than load),	5	14		7					205	10	74	121
Falls from,	3	12		3			1		73	6	26	41
Load falling,	12	70		47		2	4		663	30	246	387
Run over by,	1								10	2	5	3
Struck by load or tackle (not falling),	31	108		67	1	2			1,141	28	374	739
All others,	3	2		6					95	5	28	62
Fatal,	4	6		11					96			
Working machines,	2,120	1,428	27	958	45	303	81	40	16,647	80	4,238	12,329
Adjusting machine or work,	50	77		46	1	4	3	1	1,073	4	343	726
Breaking of machine or work,	37	33		25		4	1		392	5	106	281
Cleaning,	21	15	3	29	2	9	1	1	437		153	284
Emery wheels (bursting),		2		1					57	3	22	32
Flying objects,	1,589	866		286	4	22	5	11	5,885	11	648	5,176
Oiling,	29	15	1	10	3	2			207	5	84	118
Operating or feeding,	144	254	16	343	20	58	11	4	5,747	22	1,610	4,115
Repairing,	61	17		6	1	3	2		301	4	79	218
Saws,	64	38		89	3	16	6	4	891	6	303	582
Starting or stopping,	80	105	6	115	9	180	52	19	1,511	9	817	685
All others,	45	6	1	8	2	5			196	11	73	112
Fatal,	14	4		4	1			1	80			

TABLE NO. 5½—Continued

CAUSE.	Class of Industry.									Degree of Accident.		
	Mines and quarries.	Public service.	Tobacco and its products.	Miscellaneous.	Hotels and restaurants.	Mercantile establishments.	Jobbers and wholesalers.	Municipalities.	Total.	Fatal.	Serious.	Minor.
EXPLOSIVES, ELECTRICITY, FIRES, HOT OR CORROSIVE SUBSTANCES—Total,	2,282	1,295	11	247	81	58	26	51	8,791	436	2,241	6,114
Corrosive substances,	35	11	1	5	1	3	4	1	170	3	19	148
Fatal,									3			
Electricity,	381	321		36	1	4	1	5	1,172	93	174	905
Cutting or welding,		1							1			1
Fatal,	25	39		7				1	93			
Explosives,	1,564	102		34	16	12	9	12	2,305	279	923	1,103
Acetylene,		1							4		4	
Carbon dioxde,	46	2							54	2	12	40
Compressed air,	4	1				1			15	1	5	9
Dust,	2	4		1					18		14	4
Dynamite, powder or nitro-glycerine,	753	6		2		2	1	2	833	187	346	300
Gas,	736	72		13	12	5	3	6	1,088	68	452	568
Gasoline,	9	9		8		1	2	2	106	6	44	56
Manufacturing or storing,												
Transporting or handling,	1				1				5	2	1	2
All others,	13	7		10	3	3	3	2	182	13	45	124
Fatal,	227	5		3	1	1	1		279			

Hot substances or flames,	302	861	10	172	63	39	12	33	5,144	61	1,125	3,958
Asphalt, pitch or tar,	3	5		3		1		5	128		34	94
Cutting or welding (not electrical),	1	1							3		2	1
Flames,	54	125	8	31	10	6	5	14	667	17	157	493
Hot water (scalds),	141	380	2	41	33	28	7	10	1,308	23	305	980
Molten metal—explosion of,	7	2							45	2	16	27
Molten metal or slag (all others),	16	75		23		1		1	1,474	8	417	1,049
Other hot substances,	80	270		74	20	3		3	1,506	9	191	1,306
All others,		3							13	2	3	8
Conflagration,												
Fatal,	2	11		1					61			
FALLING OBJECTS—Total,	12,870	1,580	2	626	11	115	49	83	21,238	639	5,906	14,693
Rock and earth,	446	29		20		4	2	22	937	37	259	641
Collapse of buildings or walls,	0	5		4		1		29	129	14	59	56
Collapse of scaffolds or stagings,	52	48		39		9	2	4	424	12	161	251
Collapse of piled up material,	17	43		16	1	5	12	2	431	8	154	269
Fall of roof (mines),	11,600	11		7		3		1	11,094	498	3,231	7,365
Objects dropped by other persons,	81	176		68	1	5	3	7	796	4	234	558
Objects falling from trucks or vehicles (not loading or unloading),	246	369		29		12	9	5	1,176	5	284	887
Objects falling from buildings, trestles or scaffolds,	768	795	1	378	8	63	16	10	5,210	38	1,279	3,893
All others,	254	104	1	65	1	13	5	3	1,041	23	245	773
Fatal,	543	10		8		1		7	639			
FALL OF PERSONS—Total,	2,721	3,378	36	1,368	154	723	189	281	16,592	191	4,981	11,420
From ladder,	64	197	11	152	18	67	19	32	1,384	11	507	866
From scaffolds or platforms,	129	158	2	217	5	16	8	11	1,267	45	523	699
From vehicles,	88	94	1	134	3	197	48	56	1,172	17	476	679
From structures in course of erection,	6	9		18		3		2	200	7	106	87
From structures (all others),	28	46		37		13	5	11	329	21	152	156
From other elevations,	205	321	4	138	7	58	21	20	1,563	36	443	1,084
Into excavations,	10	22		4		2		1	127	1	35	91
Into other openings,	82	284	1	99	3	13	8	9	895	25	312	558
On level,	2,001	2,125	8	480	68	243	62	117	8,679	18	2,118	6,543
Stairways,	55	110	9	83	48	108	16	21	815	4	254	557
All others,	53	12		0	2	3	2	1	161	6	55	100
Fatal,	25	19		37	2	6	3	7	151			

TABLE NO. 5½—Continued

CAUSE.	Class of Industry.									Degree of Accident.		
	Mines and quarries.	Public service.	Tobacco and its products.	Miscellaneous.	Hotels and restaurants.	Mercantile establishments.	Jobbers and wholesalers.	Municipalities.	Total.	Fatal.	Serious.	Minor.
HANDLING OF TOOLS OR OBJECTS—Total,	11,183	9,962	42	1,603	189	872	419	188	49,088	70	10,719	38,299
Carrying or lifting objects (not loading or unloading),	7,077	4,612	28	917	98	505	293	101	28,910	39	6,839	22,032
Chipping or grinding,	204	191	--------	41	--------	4	3	--------	1,449	1	93	1,355
Handling of sharp objects,	240	138	1	54	32	75	19	9	1,841	6	207	1,628
Loading or unloading,	453	449	1	160	--------	78	59	23	2,348	2	703	1,643
Tools in hands of injured person,	2,946	4,206	9	425	57	199	40	47	13,057	17	2,531	10,509
Tools in hands of fellow workmen,	255	364	--------	65	2	11	5	8	1,466	5	336	1,125
All others,	8	2	--------	1	--------	--------	--------	--------	17	--------	10	7
Fatal,	14	9	--------	3	--------	2	2	3	70	--------	--------	--------
POWER VEHICLES—Total,	8,805	5,443	7	329	3	292	121	145	18,687	750	6,063	11,874
Collisions,	300	429	1	10	--------	14	7	1	885	75	311	499
Coupling or uncoupling cars,	1,302	304	--------	4	--------	1	1	1	1,849	36	589	1,224
Defective equipment,	4	39	--------	--------	--------	--------	--------	--------	49	2	17	30
Derailment—replacing cars,	1,607	205	--------	11	--------	--------	--------	--------	1,936	55	552	1,329
Fell from, over or into,	629	2,082	1	31	--------	16	9	5	3,214	99	1,151	1,964
Improperly loaded ladles or cars,	2	19	--------	--------	--------	--------	--------	--------	36	2	15	19
Loading or unloading material,	1,101	882	1	73	--------	44	32	7	3,261	17	683	2,561
Not on track,	54	284	3	128	1	176	55	105	1,513	52	549	912
Struck by car or engine,	2,814	621	--------	64	2	38	17	22	4,236	372	1,577	2,285
Struck by overhead or side obstruction,	818	265	1	6	--------	1	--------	2	1,163	29	457	677
Sudden starting or stopping,	9	278	--------	--------	--------	2	--------	1	298	1	101	196
All others,	165	35	--------	2	--------	--------	--------	1	247	10	61	178
Fatal,	231	334	--------	17	--------	6	5	18	750	--------	--------	--------

STEPPING ON SHARP OBJECTS—Total,	735	298	4	77	7	96	45	19	2,722	--------	185	2,537
Nails,	702	244	4	67	6	84	44	17	2,380	--------	156	2,224
All others,	33	54	--------	10	1	12	1	2	342	--------	29	313
Fatal,	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------
RUNNING INTO OR STRIKING AGAINST OBJECTS—Total,	935	695	5	216	20	93	24	22	4,048	9	750	3,289
Fatal,	1	1	--------	2	--------	--------	1	--------	9	--------	--------	--------
POISONOUS SUBSTANCES—Total,	17	21	--------	10	1	6	1	2	148	--------	43	105
Fatal,	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------
MISCELLANEOUS—Total,	3,153	1,544	1	561	56	247	61	183	9,707	196	2,063	7,448
Acids and liquids,	122	34	--------	11	7	7	2	3	579	3	129	447
Animals,	1,072	37	--------	114	2	101	22	47	1,728	18	459	1,251
Asphyxiation or suffocation,	50	32	--------	23	2	2	--------	16	265	35	46	184
Doors, windows or gates (exclusive of elevator gates),	257	337	--------	52	13	48	10	5	1,154	4	289	861
Drowning,	6	9	--------	6	--------	--------	--------	--------	36	36	--------	--------
Flying objects (not from machines, tools or explosives),	1,414	879	1	193	5	20	6	22	4,194	6	622	3,566
Frost bites,	2	3	--------	--------	--------	--------	--------	--------	8	--------	2	6
Heat prostration,	5	17	--------	7	2	1	1	2	124	7	15	102
Intentional violence,	15	86	--------	18	15	13	2	63	317	27	112	178
Lightning,	3	2	--------	2	--------	--------	--------	--------	19	6	3	10
All others,	207	108	--------	135	10	55	18	25	1,283	54	386	843
Fatal,	37	24	--------	22	3	8	2	18	196	--------	--------	--------
NATURE OF INJURY—Total,	45,513	26,025	142	6,257	583	2,888	1,064	1,026	152,544	2,569	38,942	111,033
Burns and scalds,	1,890	1,607	8	329	95	72	30	56	10,041	327	2,362	7,352
Crushes and bruises,	19,382	11,709	48	2,028	106	900	391	319	58,988	977	11,852	46,159
Cuts and lacerations,	13,521	5,690	31	1,506	182	651	181	171	41,318	343	7,741	33,234
Fractures, sprains and dislocations,	8,169	6,054	45	1,725	130	903	315	367	30,886	635	13,985	16,266
Hernia,	292	190	1	96	4	44	23	17	1,371	16	1,125	230
Blood poisoning,	792	227	5	306	46	143	50	25	4,224	37	1,199	2,988
Punctures,	1,306	428	3	185	13	145	62	38	4,754	34	454	4,263
Unclassified,	161	120	1	82	7	30	12	33	962	200	224	538

TABLE NO. 5½—Continued

CAUSE.	Class of Industry.									Degree of Accident.		
	Mines and quarries.	Public service.	Tobacco and its products.	Miscellaneous.	Hotels and restaurants.	Mercantile establishments.	Jobbers and wholesalers.	Municipalities.	Total.	Fatal.	Serious.	Minor.
LOSS OF PARTS—Total,	291	185	1	75	--------	15	2	12	1,338	81	1,156	101
Eyes,	31	8	--------	17	--------	2	1	5	122	--------	122	--------
Arms,	10	20	--------	4	--------	--------	--------	--------	54	13	41	--------
Hands,	21	13	--------	1	--------	1	--------	1	88	10	78	--------
Fingers,	145	71	1	47	--------	12	1	3	773	--------	677	96
Legs,	16	37	--------	2	--------	--------	--------	1	77	36	41	--------
Feet,	16	29	--------	3	--------	--------	--------	--------	80	21	59	--------
Toes,	52	7	--------	1	--------	--------	--------	2	144	1	138	5
SOCIAL CONDITION—Total,	45,513	26,025	142	6,257	583	2,888	1,064	1,026	152,544	2,569	38,942	111,033
Married,	28,007	16,949	76	3,230	282	1,402	664	749	91,354	1,770	23,452	66,132
Single,	16,699	7,984	62	2,447	245	1,189	382	237	55,033	799	12,787	41,447
Not given,	807	1,092	4	580	56	297	78	40	6,157	--------	2,703	3,454
Days lost,	625,519	348,159	2,158	97,157	9,157	43,421	15,819	21,550	2,053,277	--------	1,247,500	805,777
Wage loss (dollars),	2,756,010	1,439,869	6,335	393,043	25,681	138,141	58,305	72,730	8,756,697	--------	5,210,146	3,546,551
DEGREE.												
Fatal,	1,142	480	--------	121	10	29	17	56	2,569	--------	--------	--------
Serious,	11,609	7,018	44	1,971	192	858	307	452	38,942	--------	--------	--------
Minor,	32,762	18,527	98	4,165	381	2,001	740	518	111,033	--------	--------	--------

SEX.												
Male,	45,509	25,844	92	5,858	395	2,459	1,029	978	148,660	2,548	38,121	107,991
Female,	4	181	50	399	188	429	35	48	3,884	21	821	3,042
NUMBER OF DEPENDENTS—Fatal cases,	1,748	322	--------	90	--------	11	10	54	2,937	--------	--------	--------
NUMBER OF DEPENDENTS—Serious cases,	33,095	22,393	70	3,809	211	1,461	685	775	122,443	--------	--------	--------
Total number of dependents,	34,843	22,715	70	3,899	211	1,472	695	829	125,380	2,937	31,189	91,254
Total number of accidents—1919,	45,513	26,025	142	6,257	583	2,888	1,064	1,026	152,544	2,569	38,942	111,033
Total number of accidents—1918,	51,883	32,625	136	6,826	669	2,970	840	968	184,844	3,403	53,783	127,658
Total number of accidents—1917,	57,482	37,553	187	6,294	968	4,129	1,244	1,258	227,880	3,072	81,769	143,039
Total number of accidents—1916,	54,957	36,571	197	7,177	1,125	4,798	1,637	983	255,616	2,670	59,714	193,232
Grand total number of accidents,	209,835	132,774	662	26,554	3,345	14,785	4,785	4,235	820,884	11,714	234,208	574,962

TABLE NO. 6.

This table shows a summary of Industrial Accident cases for the year 1919 in which Compensation was incurred classified as to the various Classes of Industry to Cause, Nature of Injury, Loss of Parts, Social Condition, Compensation Incurred, Degree, Sex, and Number of Dependents.

TABLE NO. 6.

CAUSE.	Building and contracting.	Chemicals and allied products.	Clay, glass and stone products.	Clothing manufacture.	Food and kindred products.	Leather and rubber goods.	Liquors and beverages.	Lumber and its remanufacture.	Paper and printing industries.	Textiles.	Laundries.
MACHINERY—Total,	392	161	190	151	300	223	48	594	355	372	42
Boilers and steam pipes,		1	2		1					1	
Boiler explosions,		1	2		1					1	
Fatal,		1	2								
Prime movers—stationary engines and motors,											
Sudden starting or stopping,											
Fatal,											
Power and transmission apparatus,	58	29	31	16	23	8	1	20	22	42	
Belts and pulleys,	5	11	13	9	7	4		11	6	13	
Chains and sprockets,	8	2	3		3			5	2	3	
Cogs, gears, etc.,	18	5	9	4	7	3	1	3	5	22	
Fly wheels,	3	4	1		1					1	
Operating or repairing apparatus (electrical),		1		1					1		
Operating or repairing apparatus (not electrical),	1										
Ropes, cables and drums,	20	4	4		2				3		
Set screws, keys and bolts,	1	1							1		
Shafts and couplings,	2	1	1	2	2	1		1	4	3	
Unguarded or uncovered switches,											
All others,					1						
Fatal,	1	3	1	1				1	1		

Elevators,	19	9	11	11	34	18	5	12	16	19	1
Cable breaking,	4	2		2	1	3	1	2			
Cable unwinding,	1	1	1	2	1	2	1	1	2	3	
Cable—caught by,	6	3	5	6	14	12	2	5	7	11	
Car—caught by,		1	1	1	2						
Car—struck by,					1					1	
Counterweight—struck by,	1										
Defective equipment,	3	1			2		1				
Entering or leaving car,	1	1	1		1			1	2	1	
Fall of car,	3		1		7	1		2		2	1
Fall of person,									1		
Falling objects,			2		5			1	4	1	
All others,	3	3	2	1	5	2	1	1		4	
Fatal,											
Cranes, hoisting apparatus, etc.,	105	16	15		9	2		8	2	4	
Cable catching person,	13	3	3		1				1		
Car striking person,	8	3	2							1	
Cleaning, oiling or repairing,						1					
Falling objects (other than load),	10	2	2								
Falls from,	4		1								
Load falling,	21	3	1		4			1		1	
Run over by,											
Struck by load or tackle (not falling),	45	4	5		4	1		5	1	2	
All others,	4	1	1					2			
Fatal,	9		1					1			
Working machines,	210	106	131	124	233	195	42	554	315	366	41
Adjusting machine or work,	18	8	13	16	19	15	5	28	36	40	4
Breaking of machine or work,	7	8	2	3	4	5	6	10	3	5	
Cleaning,	4	4	8	5	26	3		14	24	41	1
Emery wheels (bursting),	1							1			
Flying objects,	41	12	27	1	5	6	3	29	5	21	
Oiling,	5	7	3	1	11	3	1	4	8	7	1
Operating or feeding,	46	25	48	84	93	149	7	235	205	145	16
Repairing,	3	2	7	1	2	2	3	3	5	5	19
Saws,	18	2	8	6	4	2		190	8	4	
Starting or stopping,	59	30	8	7	64	9	17	31	17	30	
All others,	8	8	7		5	1		9	4	8	
Fatal,	2	2	2		3	1		4	2	3	

TABLE NO. 6—Continued

CAUSE.	Building and contracting.	Chemicals and allied products.	Clay, glass and stone products.	Clothing manufacture.	Food and kindred products.	Leather and rubber goods.	Liquors and beverages.	Lumber and its remanufacture.	Paper and printing industries.	Textiles.	Laundries.
EXPLOSIVES, ELECTRICITY, FIRES, HOT OR CORROSIVE SUBSTANCES—Total,	131	161	57	9	70	25	29	18	27	33	7
Corrosive substances,	2	9	2	1	2	2	2	3	3	4	
Fatal,		1		1			1				
Electricity,	18	2	7		3	3	1		2	2	
Cutting or welding,											
Fatal,	9	2	1							1	
Explosives,	34	56	18		13	2	11	5	2	2	
Acetylene,							1				
Carbon dioxide,											
Compressed air,		1									
Dust,								2			
Dynamite, powder or nitro-glycerine,	15	33	11								
Gas,	4	13	5		9		2			2	
Gasoline,	7	5			1	2		2			
Manufacturing or storing,											
Transporting or handling,	2										
All others,	6	4	2		3		9	1	2		
Fatal,	7	23	3		1		1				

Hot substances or flames,	77	94	30	8	52	18	15	10	20	25	7
Asphalt, pitch or tar,	25	5				1	4	1	3		
Cutting or welding (not electrical),											
Flames,	10	21	5	1	3			4	1	1	
Hot water (scalds),	23	28	11	5	33	11	10	4	11	22	3
Molten metal—explosion of,											
Molten metal or slag (all others),	13	8			1	2		1	2		
Other hot substances,	6	30	14	2	15	4	1		3	2	4
All others,		1									
Conflagration,		1									
Fatal,	4	12	1	1		1	1			1	
FALLING OBJECTS—Total,	476	61	170	10	57	13	13	115	23	27	2
Rock and earth,	60	7	63		1					2	
Collapse of buildings or walls,	28	1	2					1			
Collapse of scaffolds or stagings,	92	5	2		1		3	2	1	3	
Collapse of piled up material,	18	4	23	1	12		2	10	2		
Fall of roof (mines),	6	1	3		3			2	1		
Objects dropped by other persons,	44	5	7		7	1	1	3	2	4	
Objects falling from trucks or vehicles (not loading or unloading),	12	7	15		3	2	1	10	4	2	
Objects falling from buildings, trestles or scaffolds,	179	23	33	9	18	10	6	43	11	9	
All others,	37	8	22		12			44	2	7	2
Fatal,	25		8		2			8			
FALL OF PERSONS—Total,	865	168	149	49	236	67	81	167	87	140	10
From ladder,	140	20	10	6	24	8	9	11	12	18	1
From scaffolds or platforms,	186	21	18		16	4	7	21	12	12	
From vehicles,	109	21	13	2	51	9	24	40	2	6	1
From structures in course of erection,	102	3	3		1			2		1	
From structures (all others),	43	5	10		10	1	1	6	3	6	
From other elevations,	75	23	22	2	12	7	5	15	9	16	1
Into excavations,	15	3	4		1			1		2	
Into other openings,	23	10	9	1	7	7	1	9	4	3	
On level,	144	54	58	27	95	29	23	57	32	64	7
Stairways,	17	6			16	2	10	4	12	11	
All others,	11	2	2	11	3		1	1	1	1	
Fatal,	40	8	5		8		4	3	6	4	

TABLE NO. 6—Continued

CAUSE.	Building and contracting.	Chemicals and allied products.	Clay, glass and stone products.	Clothing manufacture.	Food and kindred products.	Leather and rubber goods.	Liquors and beverages.	Lumber and its remanufacture.	Paper and printing industries.	Textiles.	Laundries.
HANDLING OF TOOLS OR OBJECTS—Total,	942	233	495	70	406	160	90	430	122	135	10
Carrying or lifting objects (not loading or unloading),	608	128	275	40	260	105	59	208	82	89	8
Chipping or grinding,	2	1	7			2		3		1	
Handling of sharp objects,	39	9	125	10	19	8	8	19	6	10	
Loading or unloading,	67	22	20		31	1	7	39	8	9	1
Tools in hands of injured person,	188	65	57	18	83	40	14	153	24	22	1
Tools in hands of fellow workmen,	37	8	11	2	13	4	2	7	1	4	
All others,	1							1	1		
Fatal,	6		3		3	1	2	2	1	1	
POWER VEHICLES—Total,	322	78	145	5	106	16	26	80	46	16	7
Collisions,	15	2	9		3			5	1		
Coupling or uncoupling cars,	11	2	7			1		6		1	
Defective equipment,											
Derailment—replacing cars,	4	3	16		1		1	1			
Fell from, over or into,	27	10	17		10		2	12	5	2	
Improperly loaded ladles or cars,		25			1			1			
Loading or unloading material,	83		27		24	8	3	36	8	4	
Not on track,	99	18	10	5	43	3	12	15	23	5	4
Struck by car or engine,	79	14	50		20	2	7	3	9	3	3
Struck by overhead or side obstruction,	1	2	4		3	1	1				
Sudden starting or stopping,											
All others,	3	2	5		1	1		1		1	
Fatal,	29	6	7		6	3	2	8	3	1	1

STEPPING ON SHARP OBJECTS—Total,	99	11	7	3	2	5	1	2	5	10	
Nails,	97	11	4	2	1	4		2	4	6	
All others,	2		3	1	1	1	1		1	4	
Fatal,											
RUNNING INTO OR STRIKING AGAINST OBJECTS—Total,	54	20	47	20	30	13	4	35	14	28	1
Fatal,		1		1		1				2	
POISONOUS SUBSTANCES—Total,	8	3	1	3	1	4		1	1	5	
Fatal,	1									1	
MISCELLANEOUS—Total,	193	95	78	21	87	28	17	86	17	40	5
Acids and liquids,	3	34	9	1	6	10		1	2	11	1
Animals,	51	6	7		43		9	23	1	1	2
Asphyxiation or suffocation,	1	12	1		2						
Doors, windows or gates (exclusive of elevator gates),	15	4	5	4	12	3	3	6	4	10	1
Drowning,	7		7								
Flying objects (not from machines),	56	18	29	6	4	2		40	4	5	
Frost bites,	1		1								
Heat prostration,	3		1				1				
Intentional violence,	1	1	4		4		1	1		2	
Lightning,		1	1							1	
All others,	55	19	13	10	16	13	3	15	6	10	1
Fatal,	14	12	12		5	2	2	1	1		
NATURE OF INJURY—Total,	3,482	991	1,339	341	1,295	554	309	1,528	697	806	84
Burns and scalds,	130	170	69	14	80	37	18	16	33	46	11
Crushes and bruises,	1,322	281	439	86	434	206	101	478	274	244	25
Cuts and lacerations,	6[illegible]	156	437	97	274	141	61	585	191	227	9
Fractures, sprains and dislocations,	1,[illegible]6	270	284	59	391	97	102	337	156	199	36
Hernia,	[illegible]	23	32	7	24	8	10	18	12	16	1
Blood poisoning,	93	38	39	61	68	46	11	61	17	4[illegible]	
Punctures,	112	[illegible]	21	13	12	13	1	17	6	17	
Unclassified,	63	36	18	4	12	6	5	16	8	11	2

TABLE NO. 6—Continued.

CAUSE.	Building and contracting.	Chemicals and allied products.	Clay, glass and stone products.	Clothing manufacture.	Food and kindred products.	Leather and rubber goods.	Liquors and beverages.	Lumber and its remanufacture.	Paper and printing industries.	Textiles.	Laundries.
LOSS OF PARTS—Total,	69	36	39	9	42	23	5	59	23	22	4
Eyes,	29	14	13	2	8	3	1	17	2	3	
Arms,	6	4	4		1	2	1		2	1	
Hands,	11	7	9	1	19	6	1	15	7	7	4
Fingers,	12	3	4	5	10	10	2	25	9	10	
Legs,	5	2	3	1	1	1		1	2	1	
Feet,	6	3	6		2	1		1	1		
Toes,		3			1						
SOCIAL CONDITION—Total,	3,482	991	1,339	341	1,295	554	309	1,528	697	806	84
Married,	2,072	619	829	139	742	320	215	904	310	400	41
Single,	1,024	304	453	173	445	206	78	562	332	349	34
Not given,	386	68	57	29	108	28	16	122	55	57	9
COMPENSATION.											
Disability cases—amount paid and awarded,	$295,580	$96,035	$111,542	$17,682	$96,842	$40,869	$20,509	$100,351	$48,734	$49,381	$8,451
Fatal cases—amount paid and awarded,	297,070	159,320	130,399	6,440	66,971	28,219	38,110	69,697	31,328	41,481	100
Total,	$592,650	$255,355	$241,941	$24,122	$163,813	$69,088	$58,619	$170,048	$80,062	$90,862	$8,551
DEGREE,	3,482	991	1,339	341	1,295	554	309	1,528	697	806	84
Fatal,	150	74	48	5	33	11	14	29	14	18	1
Serious,	3,332	917	1,291	336	1,262	543	295	1,499	683	788	83

SEX.											
Male,	3,469	965	1,301	231	1,217	522	306	1,498	591	594	57
Female,	13	26	38	110	78	32	3	30	106	212	27
NUMBER OF DEPENDENTS—Fatal cases,	222	118	91	4	43	25	26	50	17	32	----------
NUMBER OF DEPENDENTS—Serious cases,	2,227	779	1,224	152	898	403	257	982	324	372	33
TOTAL NUMBER OF DEPENDENTS,	2,449	897	1,315	156	941	428	283	1,032	341	404	33
TOTAL NUMBER OF FATAL CASES,	150	74	48	5	33	11	14	29	14	18	1
TOTAL NUMBER OF ACCIDENTS,	3,482	991	1,339	341	1,295	554	309	1,528	697	806	84

TABLE NO. 6—Continued

CAUSE.	Metals and metal products.	Mines and quarries.	Public service.	Tobacco and its products.	Miscellaneous.	Hotels and restaurants.	Mercantile establishments.	Jobbers and wholesalers.	Municipalities.	Total.	Fatal accidents by cause.
MACHINERY—Total,	4,147	1,038	410	15	566	28	236	75	22	9,365	276
Boilers and steam pipes,	11	9	1		4			1		31	13
Boiler explosions,	10	9	1		4			1		30	13
Fatal,	1	6	1		2					13	
Prime movers—stationary engines and motors,		1	1		1					3	1
Sudden starting or stopping,		1	1							2	1
Fatal,			1							1	
Power and transmission apparatus,	219	266	36	1	33		6	1	1	813	31
Belts and pulleys,	82	32	7		13		1	1		215	11
Chains and sprockets,	37	49	3		1		2		1	119	2
Cogs, gears, etc.,	66	35	11	1	6		1			197	5
Fly wheels,	3	4	2		1					20	2
Operating or repairing apparatus (electrical),	2	4	2		1					12	1
Operating or repairing apparatus (not electrical),	1	1	1							4	
Ropes, cables and drums,	17	131	6		6		2			195	4
Set screws, keys and bolts,		1								4	
Shafts and couplings,	7	8	2		5					39	4
Unguarded or uncovered switches,	1									1	
All others,	3	1	2							7	2
Fatal,	9	10	2		1			1		31	

Elevators,	109	52	20	3	35	10	36	15	5	440	58
Cable breaking,	10	2			2			1		30	2
Cable unwinding,		1								1	
Cable—caught by,	18	2	1		2			1		39	5
Car—caught by,	26	20	3	2	17	4	20	3	2	168	21
Car—struck by,	5	5	3			2	1			21	1
Counterweight—struck by,	4						1			7	2
Defective equipment,	3								1	5	
Entering or leaving car,	6	1	2		2		3	1		22	1
Fall of car,	14	12	6		5		1	2		48	7
Fall of person,	6	3	3		3	2	6	5	2	47	14
Falling objects,	2		1							4	
All others,	15	6	1	1	4	2	4	2		48	5
Fatal,	11	8			7	3	4	2	1	58	
Cranes, hoisting apparatus, etc.,	1,011	39	60		94		1	4	1	1,371	87
Cable catching person,	147	12	4		6					190	2
Car striking person,	65		1		5					85	16
Cleaning, oiling or repairing,	1				1					3	
Falling objects (other than load),	68	1	5		6					94	6
Falls from,	33	2	3		4			1		48	11
Load falling,	247	5	15		30			3		331	23
Run over by,	8	1			1					10	3
Struck by load or tackle (not falling),	393	16	30		37		1		1	545	21
All others,	49	2	2		4					65	5
Fatal,	55	4	5		12					87	
Working machines,	2,797	671	292	11	399	18	193	54	15	6,707	86
Adjusting machine or work,	293	28	33		26		1	3	2	588	6
Breaking of machine or work,	92	17	17		12		3	2	1	197	7
Cleaning,	72	12	5	2	18	1	7	1		248	2
Emery wheels (bursting),	22		1		1					26	2
Flying objects,	525	355	56		57	2	7	1	1	1,154	11
Oiling,	38	24	5		7	1	2		1	129	5
Operating or feeding,	1,307	99	105	4	158	7	35	6	1	2,775	22
Repairing,	63	34	8		3			1		161	5
Saws,	90	24	9		40	1	7	2		415	4
Starting or stopping,	239	37	50	5	72	6	126	38	8	853	6
All others,	56	41	3		5		5		1	161	16
Fatal,	38	18	5		4	1			1	86	

TABLE NO. 6—Continued

CAUSE.	Metals and metal products.	Mines and quarries.	Public service.	Tobacco and its products.	Miscellaneous.	Hotels and restaurants.	Mercantile establishments.	Jobbers and wholesalers.	Municipalities.	Total.	Fatal accidents by cause.
EXPLOSIVES, ELECTRICITY, FIRES, HOT OR CORROSIVE SUBSTANCES—Total,	1,583	1,410	286	5	88	33	26	10	20	4,028	459
Corrosive substances,	12	19	1			1	1	2	1	67	3
Fatal,										3	
Electricity,	95	114	128		12		1		3	391	95
Cutting or welding,					2					2	1
Fatal,	13	21	42		4				2	95	
Explosives,	174	1,135	32		19	10	8	2	9	1,532	288
Acetylene,	3				1					4	
Carbon dioxide,	5	12				1				18	2
Compressed air,	8	2								11	2
Dust,	13	1			1					17	1
Dynamite, powder or nitro-glycerine,	34	581			1		1	1	1	678	192
Gas,	45	523	27		3	7	5	1	6	652	67
Gasoline,	24	4	4		6		1		1	57	7
Manufacturing or storing,						1				1	
Transporting or handling,										2	2
All others,	42	12	1		7	1	1		1	92	15
Fatal,	19	224	2		3	1	2	1	1	288	

Hot substances or flames,	1,362	142	125	5	57	22	16	6	7	2,038	73
Asphalt, pitch or tar,	14	2	2		1				1	59	
Cutting or welding (not electrical),	1	1	1							3	
Flames,	112	27	31	4	11	3	4	5	1	244	30
Hot water (scalds),	149	56	39	1	13	14	12	1	4	450	15
Molten metal—explosion of,	21	4	1							26	1
Molten metal or slag (all others),	696	16	20		9					768	15
Other hot substances,	305	34	29		22	5			1	477	12
All others,			2							3	
Conflagration,	4	2			1					8	
Fatal,	30	7	12		1		1	1		73	
FALLING OBJECTS—Total,	1,576	6,604	279	2	281	2	56	22	33	9,822	651
Rock and earth,	31	356	10		7		1	2	14	554	75
Collapse of buildings or walls,	20	3	5		1		1		7	69	12
Collapse of scaffolds or stagings,	35	26	13		23		5	1	3	215	15
Collapse of piled up material,	163	17	14		12		8	3		289	11
Fall of roof (mines),	31	5,679	5		5		2			5,738	460
Objects dropped by other persons,	122	55	34		35		4	3	4	331	6
Objects falling from trucks or vehicles (not loading or unloading),	161	76	35		15		8	3	1	355	5
Objects falling from buildings, trestles or scaffolds,	753	239	122	1	148	1	24	9	4	1,642	38
All others,	260	153	41	1	35	1	3	1		629	29
Fatal,	41	540	8		9		1		9	651	
FALL OF PERSONS—Total,	1,457	1,111	564	19	638	91	347	92	121	6,459	218
From ladder,	190	39	60	6	72	9	34	7	17	693	12
From scaffolds or platforms,	153	81	49	1	120	4	8	2	7	722	50
From vehicles,	37	48	43	1	65	3	113	32	30	650	23
From structures in course of erection,	10	7	5		15		2		1	152	12
From structures (all others),	36	25	13		20	1	5	4	5	194	26
From other elevations,	190	87	86	4	66	5	31	9	10	675	39
Into excavations,	28	7	12		4	2	1			80	2
Into other openings,	118	44	45	2	47		9	5	6	350	25
On level,	617	704	220	2	191	36	94	23	36	2,513	19
Stairways,	48	31	24	3	33	30	49	9	8	313	3
All others,	30	38	7		5	1	1	1	1	117	7
Fatal,	48	94	12		32	2	4	3	5	218	

TABLE NO. 6—Continued

CAUSE.	Metals and metal products.	Mines and quarries.	Public service.	Tobacco and its products.	Miscellaneous.	Hotels and restaurants.	Mercantile establishments.	Jobbers and wholesalers.	Municipalities.	Total.	Fatal accidents by cause.
HANDLING OF TOOLS OR OBJECTS—Total,	5,261	3,910	1,184	18	625	75	320	149	60	14,695	77
Carrying or lifting objects (not loading or unloading),	3,543	2,501	653	15	379	34	188	106	31	9,312	36
Chipping or grinding,	160	18	5		7		1			207	2
Handling of sharp objects,	112	66	21	2	17	18	25	9	4	527	8
Loading or unloading,	267	230	112		40		27	25	9	915	7
Tools in hands of injured person,	964	1,003	350	1	152	22	75	8	12	3,252	18
Tools in hands of fellow workmen,	213	88	43		30	1	4	1	4	473	5
All others,	2	4								9	1
Fatal,	25	14	6		4	1	3	2	3	77	
POWER VEHICLES—Total,	1,043	4,881	875	4	165	2	145	58	58	8,078	605
Collisions,	37	231	129		6		1	3		442	55
Coupling or uncoupling cars,	124	643	36		1			1	1	834	31
Defective equipment,	2	3	2							7	2
Derailment—replacing cars,	29	821	28		5		1			910	29
Fell from, over or into,	141	311	216	1	16		9	5	3	787	68
Improperly loaded ladles or cars,	4	1	1							33	1
Loading or unloading material,	285	472	98		42		15	17	3	1,125	16
Not on track,	115	31	108	3	55	1	87	22	32	691	45
Struck by car or engine,	252	1,757	201		35	1	30	9	14	2,489	313
Struck by overhead or side obstruction,	31	482	34		4		1	1	2	567	37
Sudden starting or stopping,	3	6	13				1		1	24	1
All others,	20	123	9		1				2	169	7
Fatal,	75	224	199		15	1	12	1	12	605	

STEPPING ON SHARP OBJECTS—Total,	54	100	12		9	1	21	4	4	350	
Nails,	30	94	9		7	1	16	4	4	296	
All others,	24	6	3		2		5			54	
Fatal,											
RUNNING INTO OR STRIKING AGAINST OBJECTS—Total,	384	304	94	1	78	8	30	6	8	1,179	14
Fatal,	2	3	1		2			1		14	
POISONOUS SUBSTANCES—Total,	8	5	5		6		1		1	53	2
Fatal,										2	
MISCELLANEOUS—Total,	633	1,101	196	1	232	24	131	22	69	3,076	194
Acids and liquids,	51	42	7		4	2	2	1	3	190	4
Animals,	18	415	11		55	2	58	9	15	726	19
Asphyxiation or suffocation,	26	21	5		8	1			2	79	43
Doors, windows or gates (exclusive of elevator gates),	93	137	42	1	18	7	25	4	1	395	8
Drowning,	1	6	5		4					30	29
Flying objects (not from machines),	285	377	69		73	1	11	3	12	995	12
Frost bites,	1		1		1		1			6	
Heat prostration,	16	2	2		1	1	1		1	23	12
Intentional violence,	9	3	21		8	7	8		29	99	21
Lightning,	3	2	2		2					12	6
All others,	136	96	31		58	3	25	5	6	521	40
Fatal,	45	41	20	1	12	1	9		16	194	
NATURE OF INJURY—Total,	16,146	20,464	3,905	65	2,688	264	1,313	438	396	57,105	2,496
Burns and scalds,	1,762	1,033	303	4	105	35	27	12	17	3,922	296
Crushes and bruises,	5,641	8,958	1,683	21	768	55	407	161	131	21,715	1,160
Cuts and lacerations,	3,878	4,881	701	10	565	61	232	58	70	13,246	189
Fractures, sprains and dislocations,	3,704	4,643	998	27	959	76	514	166	141	14,265	586
Hernia,	348	232	76	1	78	5	24	10	5	977	17
Blood poisoning,	507	338	64	2	125	22	61	21	12	1,635	22
Punctures,	187	235	26		34		25	4	6	746	6
Unclassified,	119	144	54		54	7	20	6	14	599	220

TABLE NO. 6—Continued

CAUSE.	Metals and metal products.	Mines and quarries.	Public service.	Tobacco and its products.	Miscellaneous.	Hotels and restaurants.	Mercantile establishments.	Jobbers and wholesalers.	Municipalities.	Total.	Fatal accidents by cause.
LOSS OF PARTS—Total,	652	534	95		87	3	16	3	17	1,738	16
Eyes,	219	265	34		49		4	3	12	678	
Arms,	14	20	8		5				2	70	1
Hands,	137	48	12		12	1	2		2	301	2
Fingers,	172	74	11		9		8			364	
Legs,	32	30	11		7	2			1	100	9
Feet,	52	75	16		5		2			170	4
Toes,	26	22	3							55	
SOCIAL CONDITION—Total,	16,146	20,464	3,905	65	2,688	264	1,313	438	396	57,105	
Married,	9,828	12,789	2,528	41	1,400	126	626	250	288	34,467	
Single,	4,842	7,050	1,094	22	993	98	499	139	80	18,717	
Not given,	1,476	625	283	2	295	40	188	49	28	3,921	
COMPENSATION.											
Disability cases—amount paid and awarded,	$1,350,213	$1,644,262	$286,690	$2,714	$236,929	$14,214	$62,090	$25,278	$43,315	$4,551,681	
Fatal cases—amount paid and awarded,	983,997	3,527,317	594,743	2,500	212,660	7,090	67,960	25,805	139,948	6,431,155	
Total,	$2,334,210	$5,171,579	$881,433	$5,214	$449,589	$21,304	$130,050	$51,083	$183,263	$10,982,836	
DEGREE,	16,146	20,464	3,905	65	2,688	264	1,313	438	396	57,105	
Fatal,	412	1,154	316	1	108	10	36	12	50	2,496	
Serious,	15,734	19,310	3,589	64	2,580	254	1,277	426	346	54,609	

SEX.											
Male,	15,934	20,462	3,870	49	2,550	188	1,164	423	380	55,771	--------
Female,	212	2	35	16	138	76	149	15	16	1,334	--------
NUMBER OF DEPENDENTS—Fatal cases,	727	2,762	458	1	152	3	53	17	98	4,899	--------
NUMBER OF DEPENDENTS—Serious cases,	14,946	13,012	3,135	44	1,339	94	593	280	224	41,318	--------
TOTAL NUMBER OF DEPENDENTS,	15,673	15,774	3,593	45	1,491	97	646	297	322	46,217	--------
TOTAL NUMBER OF FATAL CASES,	412	1,154	316	1	108	10	36	12	50	2,496	--------
TOTAL NUMBER OF ACCIDENTS,	16,146	20,464	3,905	65	2,688	264	1,313	438	396	57,105	--------

TABLE NO. 7.

Table No. 7 is a summary of Fatal Industrial Accident cases for the year 1919 in which Compensation was incurred classified as to the various Classes of Industry to Cause, Nature of Injury, Social Condition, Sex, and Number of Dependents, also showing the number of cases and amount of Compensation incurred for each County.

TABLE NO. 7.

CAUSE.	Building and contracting.	Chemicals and allied products.	Clay, glass and stone products.	Clothing manufacture.	Food and kindred products.	Leather and rubber goods.	Liquors and beverages.	Lumber and its remanufacture.	Paper and printing industries.	Textiles.	Laundries.
MACHINERY—Total,	15	9	8	2	8	3	1	7	3	7	
Boilers and steam pipes,		1	2								
Boiler explosions,		1	2								
Prime movers—Stationary engines and motors,											
Sudden starting or stopping,											
Power and transmission apparatus,	1	3	1	1				1	1		
Belts and pulleys,		2	1					1			
Chains and sprockets,											
Cogs, gears, etc.,									1		
Fly wheels,	1	1									
Operating or repairing apparatus (electrical),				1							
Operating or repairing apparatus (not electrical),											
Ropes, cables and drums,											
Set screws, keys and bolts,											
Shafts and couplings,											
Unguarded or uncovered switches,											
All others,											

Elevators,	3	3	2	1	5	2	1	1		4	
Cable breaking,	1	1									
Cable unwinding,											
Cable—caught by,		1	1				1				
Car—caught by,	1			1	2	1		1		1	
Car—struck by,			1								
Counterweight—struck by,											
Defective equipment,											
Entering or leaving car,		1									
Fall of car,											
Fall of person,	1				3	1				2	
Falling objects,											
All others,										1	
Cranes, hoisting apparatus, etc.,	9		1					1			
Cable catching person,											
Car striking person,	1										
Cleaning, oiling or repairing,											
Falling objects (other than load),	1										
Falls from,	1										
Load falling,	2		1					1			
Run over by,											
Struck by load or tackle (not falling),	4										
All others,											
Working machines,	2	2	2		3	1		4	2	3	
Adjusting machine or work,		1									
Breaking of machine or work,					1						
Cleaning,										1	
Emery wheels (bursting),											
Flying objects,											
Oiling,		1									
Operating or feeding,	1					1		3	2	1	
Repairing,			1								
Saws,								1			
Starting or stopping,	1				1						
All others,			1		1					1	

TABLE NO. 7—Continued.

CAUSE.	Building and contracting.	Chemicals and allied products.	Clay, glass and stone products.	Clothing manufacture.	Food and kindred products.	Leather and rubber goods.	Liquors and beverages.	Lumber and its remanufacture.	Paper and printing industries.	Textiles.	Laundries.
EXPLOSIVES, ELECTRICITY, FIRES, HOT OR CORROSIVE SUBSTANCES—Total,	20	38	5	2	1	1	3			2	
Corrosive substances,		1		1			1				
Electricity,	9	2	1							1	
Cutting or welding,											
Explosives,	7	23	3		1		1				
Acetylene,											
Carbon dioxide,											
Compressed air,		1									
Dust,											
Dynamite, powder or nitro-glycerine,	2	22	3								
Gas,					1		1				
Gasoline,											
Manufacturing or storing,											
Transporting or handling,	2										
All others,	3										
Hot substances or flames,	4	12	1	1		1	1			1	
Asphalt, pitch or tar,											
Cutting or welding (not electrical),											
Flames,	1	5	1	1							
Hot water (scalds),	1	3				1	1			1	
Molten metal—explosion of,											

Molten metal or slag (all others),	2										
Other hot substances,		4									
All others,											
Conflagration,											
FALLING OBJECTS—Total,	25		8		2			8			
Rock and earth,	4		7								
Collapse of buildings or walls,	3		1								
Collapse of scaffolds or stagings,	7				1						
Collapse of piled up material,											
Fall of roof (mines),											
Objects dropped by other persons,											
Objects falling from trucks or vehicles (not loading or unloading),											
Objects falling from buildings, trestles or scaffolds,	9				1			1			
All others,	2							7			
FALL OF PERSONS—Total,	40	8	5		8		4	3	6	4	
From ladder,	1										
From scaffolds or platforms,	15		1		1		1	2	1		
From vehicles,	4	2	1		1		1			1	
From structures in course of erection,	8	1	1								
From structures (all others),	7	2	2		1				1		
From other elevations,	3	3					1		2	1	
Into excavations,											
Into other openings,					2		1			1	
On level,	1				1			1	1	1	
Stairways,	1								1		
All others,					2						
HANDLING OF TOOLS OR OBJECTS—Total,	6		3		3	1	2	2	1	1	
Carrying or lifting objects (not loading or unloading),	4		1		1	1	1		1		
Chipping or grinding,											
Handling of sharp objects,	1		1								
Loading or unloading,			1		1			1		1	
Tools in hands of injured person,	1				1		1	1			
Tools in hands of fellow workmen,											
All others,											

TABLE NO. 7—Continued

CAUSE.	Building and contracting.	Chemicals and allied products.	Clay, glass and stone products.	Clothing manufacture.	Food and kindred products.	Leather and rubber goods.	Liquors and beverages.	Lumber and its remanufacture.	Paper and printing industries.	Textiles.	Laundries.
POWER VEHICLES—Total,	29	6	7		6	3	2	8	3	1	1
Collisions,											
Coupling or uncoupling cars,	1		1			1					
Defective equipment,											
Derailment—replacing cars,			1								
Fell from, over or into,	3		1					2			
Improperly loaded ladles or cars,											
Loading or unloading material,	1							2		1	
Not on track,	6	2			1		1	2	2		
Struck by car or engine,	18	3	4		5	1	1	2	1		1
Struck by overhead or side obstruction,		1									
Sudden starting or stopping,											
All others,						1					
STEPPING ON SHARP OBJECTS—Total,											
Nails,											
All others,											
RUNNING INTO OR STRIKING AGAINST OBJECTS,		1		1		1				2	
POISONOUS SUBSTANCES,	1									1	

MISCELLANEOUS—Total,	14	12	12		5	2	2	1	1		
Acids and liquids,		1				1			1		
Animals,	1				2						
Asphyxiation or suffocation,		8			2						
Doors, windows or gates (exclusive of elevator gates),	1										
Drowning,	7		7								
Flying objects (not from machines),	1		1								
Frost bites,											
Heat prostration,	1		1				1				
Intentional violence,			1		1						
Lightning,		1	1								
All others,	3	2	1			1	1	1			
NATURE OF INJURY—Total,	150	74	48	5	33	11	14	29	14	18	1
Burns and scalds,	12	27	2	2	1	1	2		1	1	
Crushes and bruises,	66	12	18	2	14	3	3	9	10	5	1
Cuts and lacerations,	10	5	8		3	1	1	5		3	
Fractures, sprains and dislocations,	42	10	8		10	1	5	13	1	4	
Hernia,	1	1				1					
Blood poisoning,	1		1		1	3				1	
Punctures,						1					
Unclassified,	18	19	11	1	4		3	2	2	4	
LOSS OF PARTS—Total,			2								
Eyes,											
Arms,											
Hands,											
Fingers,											
Legs,			2								
Feet,											
Toes,											
SOCIAL CONDITION—Total,	150	74	48	5	33	11	14	29	14	18	1
Married,	96	45	34	4	22	8	12	20	9	14	
Single,	51	27	13	1	11	2	2	9	4	4	1
Not given,	3	2	1			1			1		

TABLE NO. 7—Continued

CAUSE.	Building and contracting.	Chemicals and allied products.	Clay, glass and stone products.	Clothing manufacture.	Food and kindred products.	Leather and rubber goods.	Liquors and beverages.	Lumber and its remanufacture.	Paper and printing industries.	Textiles.	Laundries.
COMPENSATION.											
Fatal cases—amount paid and awarded,	$297,070	$159,320	$130,399	$6,440	$66,971	$28,219	$38,110	$69,697	$31,328	$41,481	$100
SEX.											
Male,	150	72	48	3	32	11	14	29	13	17	1
Female,		2		2	1				1	1	
NUMBER OF DEPENDENTS, FATAL CASES,	222	118	91	4	43	25	26	50	17	32	
TOTAL NUMBER OF FATAL CASES,	150	74	48	5	33	11	14	29	14	18	1

TABLE NO. 7—Continued

CAUSE.	Metals and metal products.	Mines and quarries.	Public service.	Tobacco and its products.	Miscellaneous.	Hotels and restaurants.	Mercantile establishments.	Jobbers and wholesalers.	Municipalities.	Total.
MACHINERY—Total,	114	46	14		26	4	4	3	2	276
Boilers and steam pipes,	1	6	1		2					13
Boiler explosions,	1	6	1		2					13
Prime movers—Stationary engines and motors,			1							1
Sudden starting or stopping,			1							1
Power and transmission apparatus,	9	10	2		1			1		31
Belts and pulleys,	4	1	1					1		11
Chains and sprockets,	1	1								2
Cogs, gears, etc.,	1	3								5
Fly wheels,										2
Operating or repairing apparatus (electrical),										1
Operating or repairing apparatus (not electrical),										
Ropes, cables and drums,	1	2	1							4
Set screws, keys and bolts,										
Shafts and couplings,	1	2			1					4
Unguarded or uncovered switches,										
All others,	1	1								2

TABLE NO. 7—Continued

CAUSE.	Metals and metal products.	Mines and quarries.	Public service.	Tobacco and its products.	Miscellaneous.	Hotels and restaurants.	Mercantile establishments.	Jobbers and wholesalers.	Municipalities.	Total.
Elevators,	11	8			7	3	4	2	1	58
Cable breaking,										2
Cable unwinding,										
Cable—caught by,	2									5
Car—caught by,	3	2			4	1	3		1	21
Car—struck by,										1
Counterweight—struck by,	2									2
Defective equipment,										
Entering or leaving car,										1
Fall of car,	2	3			2					7
Fall of person,		2			1	1	1	2		14
Falling objects,										
All others,	2	1				1				5
Cranes, hoisting apparatus, etc.,	55	4	5		12					87
Cable catching person,	2									2
Car striking person,	13		1		1					16
Cleaning, oiling or repairing,										
Falling objects (other than load),	2		1		2					6
Falls from,	5	1	2		2					11
Load falling,	13	1	1		4					23
Run over by,	2				1					3
Struck by load or tackle (not falling),	14	1			2					21
All others,	4	1								5

Working machines,	38	18	5		4	1			1	86
Adjusting machine or work,	2	3								6
Breaking of machine or work,	5		1							7
Cleaning,			1							2
Emery wheels (bursting),	2									2
Flying objects,	9				1	1				11
Oiling,		4								5
Operating or feeding,	10	1	1		2					22
Repairing,	3	1								5
Saws,	2				1					4
Starting or stopping,	2	1							1	6
All others,	3	9	1							16
EXPLOSIVES, ELECTRICITY, FIRES, HOT OR CORROSIVE SUBSTANCES—Total,	62	252	56		8	1	3	2	3	459
Corrosive substances,										3
Electricity,	13	21	42		4				2	95
Cutting or welding,					1					1
Explosives,	19	224	2		3	1	2	1	1	288
Acetylene,										
Carbon dioxide,	1	1								2
Compressed air,	1									2
Dust,	1									1
Dynamite, powder or nitro-glycerine,	3	161					1			192
Gas,	4	58	1			1	1			67
Gasoline,	2		1		3			1		7
Manufacturing or storing,										
Transporting or handling,										2
All others,	7	4							1	15
Hot substances or flames,	30	7	12		1		1	1		73
Asphalt, pitch or tar,										
Cutting or welding (not electrical),										
Flames,	6	6	8		1			1		30
Hot water (scalds),	6		1				1			15
Molten metal—explosion of,	1									1
Molten metal or slag (all others),	12		1							15
Other hot substances,	5	1	2							12
All others,										
Conflagration,										

TABLE NO. 7—Continued

CAUSE.	Metals and metal products.	Mines and quarries.	Public service.	Tobacco and its products.	Miscellaneous.	Hotels and restaurants.	Mercantile establishments.	Jobbers and wholesalers.	Municipalities.	Total.
FALLING OBJECTS—Total,	41	540	8		9		1		9	651
Rock and earth,	1	59	1		1				2	75
Collapse of buildings or walls,	3								5	12
Collapse of scaffolds or stagings,	3	1	1		1				1	15
Collapse of piled up material,	8	1			1		1			11
Fall of roof (mines),		460								460
Objects dropped by other persons,		3	1		1				1	6
Objects falling from trucks or vehicles (not loading or unloading),	3	1			1					5
Objects falling from buildings, trestles or scaffolds,	17	4	3		3					28
All others,	6	11	2		1					29
FALL OF PERSONS—Total,	48	34	12		32	2	4	3	5	218
From ladder,	7	1	1		1		1			12
From scaffolds or platforms,	9	4	4		12					50
From vehicles,	5	1			1		2	1	3	23
From structures in course of erection,		1			1					12
From structures (all others),	7	3			1	1		1		26
From other elevations,	8	7	4		9	1				39
Into excavations,	1		1							2
Into other openings,	3	10			6		1		1	25
On level,	5	5	2		1				1	19
Stairways,								1		3
All others,	3	2								7

HANDLING OF TOOLS OR OBJECTS—Total,	25	14	6		4	1	3	2	3	77
Carrying or lifting objects (not loading or unloading),	9	8	2		2	1	2	1	2	36
Chipping or grinding,	1						1			2
Handling of sharp objects,	2	1			1			1	1	8
Loading or unloading,	1	1	1							7
Tools in hands of injured person,	8	2	3		1					18
Tools in hands of fellow workmen,	4	1								5
All others,		1								1
POWER VEHICLES—Total,	75	224	199		15	1	12	1	12	605
Collisions,	5	13	37							55
Coupling or uncoupling cars,	10	12	6							31
Defective equipment,	1		1							2
Derailment—replacing cars,	2	18	7		1					29
Fell from, over or into,	10	26	26							68
Improperly loaded ladles or cars,		1								1
Loading or unloading material,	3	3	5		1					16
Not on track,	6	2	6		4	1	7		5	45
Struck by car or engine,	32	122	101		9		5	1	7	313
Struck by overhead or side obstruction,	4	23	9							37
Sudden starting or stopping,			1							1
All others,	2	4								7
STEPPING ON SHARP OBJECTS—Total,										
Nails,										
All others,										
RUNNING INTO OR STRIKING AGAINST OBJECTS,	2	3	1		2			1		14
POISONOUS SUBSTANCES,										2
MISCELLANEOUS—Total,	45	41	20	1	12	1	9		16	194
Acids and liquids,			1							4
Animals,	3	6			3		3		1	19
Asphyxiation or suffocation,	18	11	2						2	43
Doors, windows or gates (exclusive of elevator gates),	2	3		1			1			8
Drowning,		6	5		4					29
Flying objects (not from machines),	5	3	1				1			12

TABLE NO. 7—Continued

CAUSE.	Metals and metal products.	Mines and quarries.	Public service.	Tobacco and its products.	Miscellaneous.	Hotels and restaurants.	Mercantile establishments.	Jobbers and wholesalers.	Municipalities.	Total.
MISCELLANEOUS—Continued.										
Frost bites,										
Heat prostration,	5	1	2				1			12
Intentional violence,	2		3			1	2		11	21
Lightning,	1	2			1					6
All others,	9	9	6		4		1		2	40
NATURE OF INJURY—Total,	412	1,154	316	1	108	10	36	12	50	2,496
Burns and scalds,	56	138	41		5	1	3	2	1	296
Crushes and bruises,	157	583	191	1	37	4	16	5	23	1,160
Cuts and lacerations,	34	81	16		9		3	1	9	189
Fractures, sprains and dislocations,	110	278	38		43	4	7	3	9	586
Hernia,	2	10				1	1			17
Blood poisoning,	6	1	2		4		1	1		22
Punctures,	2	3								6
Unclassified,	45	60	28		10		5		8	220
LOSS OF PARTS—Total,	2	4	6		2					16
Eyes,										
Arms,			1							1
Hands,	2									2
Fingers,										
Legs,		2	3		2					9
Feet,		2	2							4
Toes,										

SOCIAL CONDITION—Total,	412	1,154	316	1	108	10	36	12	50	2,496
Married,	288	782	216	1	62	4	21	8	44	1,690
Single,	106	362	81	----------	43	5	14	4	6	746
Not given,	18	10	19	----------	3	1	1	----------	----------	60
COMPENSATION.										
Fatal cases—amount paid and awarded,	$983,997	$3,527,317	$594,743	$2,500	$212,660	$7,090	$67,960	$25,805	$139,948	$6,431,155
SEX.										
Male,	409	1,154	314	1	106	10	36	12	49	2,481
Female,	3	----------	2	----------	2	----------	----------	----------	1	15
NUMBER OF DEPENDENTS, FATAL CASES,	727	2,762	458	1	152	3	53	17	98	4,899
TOTAL NUMBER OF FATAL CASES,	412	1,154	316	1	108	10	36	12	50	2,496

Counties.	Number of Fatals.	Compensation Paid and Awarded.	Counties.	Number of Fatals.	Compensation Paid and Awarded.
Adams,	2	$2,600	Lackawanna,	162	483,212
Allegheny,	365	782,419	Lancaster,	9	19,284
Armstrong,	21	38,441	Lawrence,	20	57,030
Beaver,	25	58,309	Lebanon,	9	23,285
Bedford,	6	15,144	Lehigh,	23	61,544
Berks,	26	41,327	Luzerne,	328	1,043,019
Blair,	25	64,059	Lycoming,	8	14,007
Bradford,	6	14,068	McKean,	7	22,205
Bucks,	20	38,157	Mercer,	22	65,353
Butler,	16	31,894	Mifflin,	19	49,702
Cambria,	96	231,944	Monroe,	2	8,731
Cameron,	3	300	Montgomery,	28	85,422
Carbon,	34	107,927	Montour,	1	100
Centre,	9	25,558	Northampton,	58	155,994
Chester,	23	38,732	Northumberland,	66	205,351
Clarion,	5	17,782	Perry,	2	2,721
Clearfield,	25	77,044	Philadelphia,	255	554,933
Clinton,	8	19,224	Pike,	1	100
Columbia,	9	34,408	Potter,	3	8,858
Crawford,	4	6,408	Schuylkill,	150	409,382
Cumberland,	4	2,739	Snyder,	----	--------
Dauphin,	40	91,373	Somerset,	40	120,261
Delaware,	69	131,892	Sullivan,	5	8,590
Elk,	11	22,689	Susquehanna,	5	4,098
Erie,	23	59,254	Tioga,	4	15,366
Fayette,	102	252,329	Union,	----	--------
Forest,	----	--------	Venango,	12	24,937
Franklin,	7	19,857	Warren,	7	19,790
Fulton,	----	--------	Washington,	83	184,343
Greene,	12	18,758	Wayne,	3	11,426
Huntingdon,	10	18,608	Westmoreland,	101	303,854
Indiana,	34	142,989	Wyoming,	1	2,456
Jefferson,	13	41,196	York,	8	18,332
Juniata,	1	100			
			Total,	2,496	$6,431,155

TABLE NO. 8.

This table shows a summary of Industrial Accident cases in which Compensation was incurred, by Class of Industry for the year 1919, 1918, 1917 and 1916, giving the figures for each group.

TABLE NO. 8.

	Class of Industry.										
	Building and contracting.	Chemicals and allied products.	Clay, glass and stone products.	Clothing manufacture.	Food and kindred products.	Leather and rubber goods.	Liquors and beverages.	Lumber and its remanufacture.	Paper and printing industries.	Textiles.	Laundries.
Total number fatal cases, 1919,	150	74	48	5	33	11	14	29	14	18	1
Total number fatal cases, 1918,	180	156	33	1	29	8	16	18	21	13	----------
Total number fatal cases, 1917,	140	119	26	4	24	3	3	24	15	13	1
Total number fatal cases, 1916,	123	57	36	1	19	7	12	27	14	12	1
Grand total number fatal cases,	593	406	143	11	105	29	45	98	64	56	3
Compensation.											
Paid and awarded fatal cases, 1919,	$297,070	$159,320	$130,399	$6,440	$66,971	$28,219	$38,110	$69,697	$31,328	$41,481	$100
Paid and awarded fatal cases, 1918,	405,283	378,202	95,443	2,500	66,086	16,256	46,951	22,644	41,049	19,451	----------
Paid and awarded fatal cases, 1917,	225,961	211,352	52,904	6,212	44,890	298	5,580	41,205	20,983	15,979	1,600
Paid and awarded fatal cases, 1916,	247,867	144,254	74,294	2,453	39,822	16,263	32,385	47,804	28,705	25,458	712
Grand total compensation fatal cases,	$1,176,181	$893,128	$353,040	$17,605	$217,769	$61,036	$123,026	$181,350	$122,065	$102,369	$2,412
Total number disability cases, 1919,	3,332	917	1,291	336	1,262	543	295	1,499	683	788	83
Total number disability cases, 1918,	4,604	1,299	1,754	458	1,269	514	404	1,635	812	966	118
Total number disability cases, 1917,	3,473	744	1,198	350	994	435	380	1,212	543	685	93
Total number disability cases, 1916,	4,945	1,175	1,638	501	1,423	504	530	1,832	848	1,007	115
Grand total number disability cases,	15,754	4,135	5,881	1,645	4,948	1,996	1,609	6,178	2,886	3,446	409

Compensation.											
Paid and awarded disability cases, 1919,	$295,580	$96,035	$111,542	$17,682	$96,842	$40,869	$20,509	$100,351	$48,734	$49,381	$8,451
Paid and awarded disability cases, 1918,	$393,967	$102,677	$109,053	$18,023	$79,818	$29,366	27,868	94,839	44,731	55,470	9,294
Paid and awarded disability cases, 1917,	180,364	41,852	65,681	9,148	39,379	20,851	16,979	53,489	24,627	27,094	6,222
Paid and awarded disability cases, 1916,	305,442	59,996	85,488	11,521	60,765	22,574	29,520	69,878	45,203	46,297	9,819
Grand total compensation disability cases,	$1,175,353	$300,560	$371,764	$56,374	$276,804	$113,660	$94,876	$318,557	$163,295	$178,242	$33,786
Grand total number cases, 1919,	3,482	991	1,339	341	1,295	554	309	1,528	697	806	84
Grand total number cases, 1918,	4,184	1,455	1,787	459	1,298	522	420	1,653	833	979	118
Grand total number cases, 1917,	3,613	863	1,224	354	1,018	438	383	1,236	558	698	94
Grand total number cases, 1916,	5,068	1,232	1,674	502	1,442	511	542	1,859	862	1,019	116
Grand total number cases,	16,347	4,541	6,024	1,656	5,053	2,025	1,654	6,276	2,950	3,502	412
Compensation.											
Paid and awarded total cases, 1919,	$592,650	$255,355	$241,941	$24,122	$163,813	$69,088	$58,619	$170,048	$80,062	$90,862	$8,551
Paid and awarded total cases, 1918,	799,250	480,879	204,496	20,523	145,904	45,622	74,819	117,483	85,780	74,921	9,294
Paid and awarded total cases, 1917,	406,325	253,264	118,585	15,360	84,269	21,149	22,559	94,694	45,610	43,673	7,822
Paid and awarded total cases, 1916,	553,309	204,250	159,782	13,974	100,587	38,837	61,905	117,682	73,908	71,755	10,531
Grand total compensation total cases,	$2,351,534	$1,193,688	$724,804	$73,979	$494,573	$174,696	$217,902	$499,907	$285,360	$280,611	$36,198

TABLE NO. 8—Continued

	Class of Industry.									
	Metals and metal products.	Mines and quarries.	Public service.	Tobacco and its products.	Miscellaneous.	Hotels and restaurants.	Mercantile.	Jobbers and warehouses.	Municipalities.	Total.
Total number fatal cases, 1919,	412	1,154	316	1	108	10	36	12	50	2,496
Total number fatal cases, 1918,	492	1,167	259	1	113	11	26	15	48	2,607
Total number fatal cases, 1917,	375	911	172	----------	33	6	38	9	30	1,946
Total number fatal cases, 1916,	318	826	164	----------	42	4	28	11	25	1,727
Grand total number fatal cases,	1,597	4,058	911	2	296	31	128	47	153	8,776
Compensation.										
Paid and awarded fatal cases, 1919,	$983,997	$3,527,317	$594,743	$2,500	$212,660	$7,090	$67,960	$25,805	$139,948	$6,431,155
Paid and awarded fatal cases, 1918,	1,213,108	3,504,220	570,532	3,794	268,653	18,176	52,890	30,645	104,435	6,859,718
Paid and awarded fatal cases, 1917,	740,548	2,211,553	408,064	----------	58,109	6,019	57,316	17,290	63,465	4,189,328
Paid and awarded fatal cases, 1916,	763,381	2,112,867	371,968	----------	87,637	1,620	37,835	28,138	52,612	4,116,075
Grand total compensation fatal cases,	$3,701,034	$11,355,957	$1,945,307	$6,294	$626,459	$32,905	$216,001	$101,878	$360,460	$21,596,276
Total number disability cases, 1919,	15,734	19,310	3,589	64	2,580	254	1,277	426	346	54,609
Total number disability cases, 1918,	21,730	21,994	4,726	62	2,979	370	1,361	405	453	67,313
Total number disability cases, 1917,	16,612	15,122	2,895	52	1,489	273	1,061	273	328	48,122
Total number disability cases, 1916,	23,386	21,252	5,290	73	2,259	414	1,559	443	372	69,566
Grand total number disability cases,	77,462	77,678	16,500	251	9,307	1,311	5,258	1,547	1,409	239,610

Compensation.										
Paid and awarded disability cases, 1919,	$1,350,213	$1,644,262	$283,690	$2,714	$236,929	$14,214	$62,090	$25,278	$43,315	$4,551,681
Paid and awarded disability cases, 1918,	1,455,173	1,621,529	359,590	2,954	215,899	14,814	72,997	22,033	50,102	4,780,197
Paid and awarded disability cases, 1917,	821,154	685,176	144,484	1,150	58,182	10,122	33,666	8,267	18,057	2,265,884
Paid and awarded disability cases, 1916,	1,116,942	1,029,856	306,165	1,661	105,336	14,326	56,363	15,937	24,566	3,417,655
Grand total compensation disability cases,	$4,743,482	$4,980,823	$1,096,929	$8,479	$616,346	$53,476	$225,056	$71,515	$136,040	$15,015,417
Grand total number cases, 1919,	16,146	20,464	3,905	65	2,688	261	1,313	438	396	57,105
Grand total number cases, 1918,	22,222	23,161	4,985	63	3,092	381	1,387	420	501	69,920
Grand total number cases, 1917,	16,987	16,033	3,067	52	1,522	279	1,099	282	268	50,068
Grand total number cases, 1916,	23,704	22,078	5,454	73	2,301	418	1,587	454	397	71,293
Grand total number cases,	79,059	81,736	17,411	253	9,603	1,342	5,386	1,594	1,562	248,386
Compensation.										
Paid and awarded total cases, 1919,	$2,334,210	$5,171,579	$881,433	$5,214	$449,589	$21,304	$130,050	$51,083	$183,263	$10,982,836
Paid and awarded total cases, 1918,	2,668,281	5,125,749	930,122	6,748	483,952	32,990	125,887	52,678	154,537	11,639,915
Paid and awarded total cases, 1917,	1,561,702	2,896,729	552,548	1,150	116,291	16,141	90,922	25,557	81,522	6,455,212
Paid and awarded total cases, 1916,	1,880,323	3,142,723	678,133	1,661	192,973	15,946	94,198	44,075	77,178	7,533,730
Grand total compensation total cases,	$8,444,516	$16,336,780	$3,042,236	$14,773	$1,242,805	$86,381	$441,057	$173,393	$496,500	$36,611,693

TABLE NO. 9.

This table shows the number of EYE losses and amount of Compensation awarded and paid for these losses during the year 1919. It also gives the Class of Industry in which the accident occurred, Cause of accident, Social Condition, etc. The totals for the preceding years are likewise given.

TABLE NO. 9.

Cause.	Class of Industry.									
	Building and contracting.	Chemical and allied products.	Clay, glass and stone products.	Clothing manufacture.	Food and kindred products.	Leather and rubber goods.	Liquors and beverages.	Lumber and its remanufacture.	Paper and printing industries.	Textiles.
MACHINERY—Total,	10	3	8		1	1		5	1	1
Power and transmission apparatus,										
Belts and pulleys,										
Cogs, gears, etc.,										
Operating or repairing apparatus (electrical),										
Elevators,			1							
Fall of car,			1							
Fall of person,										
Cranes, hoisting apparatus, etc.,										1
Cable catching person,										
Falling objects (other than load),										
Struck by load or tackle (not falling),										1

Working machines,	10	3	7		1	1		5	1	
Adjusting machine or work,									1	
Breaking of machine or work,										
Flying objects,	10	3	7		1	1		4		
Operating or feeding,								1		
EXPLOSIVES, ELECTRICITY, FIRES, HOT OR CORROSIVE SUBSTANCES—Total,	7	3			2		1			
Corrosive substances,	1									
Electricity,										
Explosives,	5	2					1			
Dynamite, powder or nitro glycerine,	5	2								
Gas,										
All others,							1			
Hot substances or flames,	1	1			2					
Flames,										
Hot water (scalds),		1			1					
Molten metal or slag (all others),	1									
Other hot substances,					1					
FALLING OBJECTS—Total,	1									
Rock and earth,										
Fall of roof (mines),										
Objects dropped by other persons,										
Objects falling from buildings, trestles, scaffolds,	1									
FALL OF PERSON—Total,	1									
From ladder,										
From scaffolds or platforms,										
From vehicles,	1									
From structures (all others),										
From other elevations,										
On level,										

TABLE NO. 9—Continued

Cause.	Class of Industry.									
	Building and contracting.	Chemical and allied products.	Clay, glass and stone products.	Clothing manufacture.	Food and kindred products.	Leather and rubber goods.	Liquors and beverages.	Lumber and its remanufacture.	Paper and printing industries.	Textiles.
HANDLING OF TOOLS OR OBJECTS—Total,	3	1	1	1				3	1	1
Carrying or lifting objects (not loading or unloading),	1								1	
Chipping or grinding,										1
Handling of sharp objects,			1							
Loading or unloading,										
Tools in hands of injured person,	2	1						3		
Tools in hands of fellow workmen,				1						
POWER VEHICLES—Total,	1				1					
Coupling or uncoupling cars,										
Loading or unloading material,	1									
Not on track,										
Struck by car or engine,										
Struck by overhead or side obstruction,					1					
All others,										
RUNNING INTO OR STRIKING AGAINST OBJECTS,										
MISCELLANEOUS—Total,	6	7	4	1	4	2		9		1
Acids or liquids,		5	1			1				
Animals,	1									

Asphyxiation or suffocation,										
Doors, windows or gates (exclusive of elevator gates),					1					
Flying objects (not from machines),	5	2	3	1	3	1		9		1
NATURE OF INJURY—Total,	27	11	13	2	8	3	1	17	2	3
Burns and scalds,	3	5			1					
Crushes and bruises,	4							3		
Cuts and lacerations,	18	6	12	2	4	3		12	2	2
Fractures, sprains and dislocations,										
Hernia,										
Blood poisoning,	2				3					
Punctures,			1				1	2		1
Unclassified,										
SOCIAL CONDITION—Total,	27	11	13	2	8	3	1	17	2	3
Married,	15	5	8	1	5	2	1	11		3
Single,	9	4	3	1	3	1		3	2	
Not given,	3	2	2					3		
Compensation.										
Amount paid and awarded,	$36,954	$19,151	$14,753	$2,368	$10,000	$3,334	$1,250	$16,905	$2,419	$3,613
Sex.										
Male,	27	11	13	2	8	3	1	17	2	3
Female,										
Total number of dependents,	19	3	7	2	7	5	3	24		2
Total number of accidents, 1919,	27	11	13	2	8	3	1	17	2	3
Total number of accidents, 1918,	51	17	15	4	1	1	6	15	2	5
Total number of accidents, 1917,	23	3	13	1	2	1	6	8	3	1
Total number of accidents, 1916,	22	10	12	2	4	1	2	8	1	2
Grand total number accidents,	123	41	53	9	15	6	15	48	8	11
Total loss of parts, 1919,	29	14	13	2	8	3	1	17	2	3
Total loss of parts, 1918,	53	18	16	4	1	1	6	15	2	5
Total loss of parts, 1917,	24	3	14	1	2	1	6	8	3	1
Total loss of parts, 1916,	23	10	12	2	4	1	2	8	1	2
Grand total loss of parts,	129	45	55	9	15	6	15	48	8	11

TABLE NO. 9—Continued

Cause.	Class of Industry.										Total.
	Laundries.	Metals and metal products.	Mines and quarries.	Public service.	Tobacco and its products.	Miscellaneous.	Hotels and restaurants.	Mercantile establishments.	Jobbers and warehouses.	Municipalities.	
MACHINERY—Total,		106	77	14		14		1		1	243
Power and transmission apparatus,		1	4								5
Belts and pulleys,		1									1
Cogs, gears, etc.,			1								1
Operating or repairing apparatus (electrical),			3								3
Elevators,		3	1	3						1	9
Fall of car,		3	1	3							8
Fall of person,										1	1
Cranes, hoisting apparatus, etc.,		3									4
Cable catching person,		1									1
Falling objects (other than load),		1									1
Struck by load or tackle (not falling),		1									2

Working machines,		99	72	11		14		1			225
Adjusting machine or work,		1	1								3
Breaking of machine or work,		4		1		1					6
Flying objects,		94	71	10		13		1			215
Operating or feeding,											1
EXPLOSIVES, ELECTRICITY, FIRES, HOT OR CORROSIVE SUBSTANCES—Total,		19	60	2					2		96
Corrosive substances,				1							2
Electricity,		1									1
Explosives,		11	59								78
Dynamite, powder or nitro glycerine,		4	55								66
Gas,		4	1								5
All others,		3	3								7
Hot substances or flames,		7	1	1					2		15
Flames,				1					2		3
Hot water (scalds),		1									3
Molten metal or slag (all others),		6	1								8
Other hot substances,											1
FALLING OBJECTS—Total,		4	19			1					25
Rock and earth,			4								4
Fall of roof (mines),		1	15								16
Objects dropped by other persons,		1									1
Objects falling from buildings, trestles, scaffolds,		2				1					4
FALL OF PERSON—Total,		3	2			1		1		1	9
From ladder,		1									1
From scaffolds or platforms,		1								1	2
From vehicles,								1			2
From structures (all others),			1								1
From other elevations,		1									1
On level,			1			1					2

TABLE NO. 9—Continued

Cause.	Class of Industry.										Total.
	Laundries.	Metals and metal products.	Mines and quarries.	Public service.	Tobacco and its products.	Miscellaneous.	Hotels and restaurants.	Mercantile establishments.	Jobbers and warehouses.	Municipalities.	
HANDLING OF TOOLS OR OBJECTS—Total,		30	18	4		6		1		2	72
Carrying or lifting objects (not loading or unloading),		3	1					1			7
Chipping or grinding,		5	10			2					18
Handling of sharp objects,											1
Loading or unloading,			1								1
Tools in hands of injured person,		18	4	4		3				2	37
Tools in hands of fellow workmen,		4	2			1					8
POWER VEHICLES—Total,		1	4			1					8
Coupling or uncoupling cars,			1								1
Loading or unloading material,			1								2
Not on track,						1					1
Struck by car or engine,		1									1
Struck by overhead or side obstruction,			1								2
All others,			1								1
RUNNING INTO OR STRIKING AGAINST OBJECTS,		2				1		1			4
MISCELLANEOUS—Total,		54	85	14		25			1	8	221
Acids or liquids,		7	5			1				1	21
Animals,			4								5

Asphyxiation or suffocation,			1								1
Doors, windows or gates (exclusive of elevator gates),			1								2
Flying objects (not from machines),		47	74	14		24			1	7	192
NATURE OF INJURY—Total,		213	250	34		49		4	2	12	651
Burns and scalds,		17	14	2					1		43
Crushes and bruises,		18	31	6		7					69
Cuts and lacerations,		157	194	24		38		3	1	12	490
Fractures, sprains and dislocations,			1			1					2
Hernia,											
Blood poisoning,		4	4	1		1		1			16
Punctures,		16	5	1		2					29
Unclassified,		1	1								2
SOCIAL CONDITION—Total,		213	250	34		49		4	2	12	651
Married,		129	177	25		25		1	1	5	414
Single,		64	58	8		20		2	1	2	181
Not given,		20	15	1		4		1		5	56
Compensation.											
Amount paid and awarded,		$265,061	$330,425	$40,373		$60,120		$4,169	$5,250	$12,287	$838,432
Sex.											
Male,		212	250	34		49		3	2	12	649
Female,		1						1			2
Total number of dependents,		219	166	35		25			2	5	524
Total number of accidents, 1919,		213	250	34		49		4	2	12	651
Total number of accidents, 1918,	1	261	214	49		26		5	2	8	683
Total number of accidents, 1917,	1	146	118	16		7	2	3	1	7	302
Total number of accidents, 1916,		132	114	26		11	1	4	2	3	357
Grand total number accidents,	2	752	696	125		93	3	16	7	30	2,053
Total loss of parts, 1919,		219	265	34		49		4	3	12	678
Total loss of parts, 1918,	1	263	226	50		26		5	2	8	705
Total loss of parts, 1917,	1	150	122	16		7	2	3	1	7	372
Total loss of parts, 1916,		135	119	26		11	1	4	2	3	366
Grand total loss of parts,	2	770	732	126		93	3	16	8	30	2,121

TABLE NO. 10.

This table shows the number of ARM losses and amount of Compensation awarded and paid for these losses during the year 1919. It also gives the Class of Industry in which the accident occurred, Cause of accident, Social Condition, etc. The totals for the preceding years are likewise given.

TABLE NO. 10.

Cause.	Class of Industry.										
	Building and contracting.	Chemicals and allied products.	Clay, glass and stone products.	Clothing manufacture.	Food and kindred products.	Leather and rubber goods.	Liquors and beverages.	Lumber and its remanufacture.	Paper and printing industries.	Textiles.	Laundries.
MACHINERY—Total,	2	3	1						2	1	
Power and transmission apparatus,	1								1	1	
Belts and pulleys,	1								1		
Cogs, gears, etc.,										1	
Ropes, cables and drums,											
Elevators,		1									
Cable breaking,		1									
Defective equipment,											
Cranes, hoisting apparatus, etc.,	1	1									
Cable catching person,											
Struck by load or tackle (not falling),	1										
All others,											

Working machines,		1	1						1		
Adjusting machine or work,											
Cleaning,		1									
Operating or feeding,									1		
Repairing,											
Starting or stopping,											
All others,			1								
EXPLOSIVES, ELECTRICITY, FIRES, HOT OR CORROSIVE SUBSTANCES—Total,											
Electricity,											
FALLING OBJECTS—Total,											
Rock or earth,											
Fall of roof (mines),											
FALL OF PERSONS—Total,	1		1			1					
From ladder,											
From scaffolds or platforms,											
From other elevations,	1										
Into other openings,			1								
On level,						1					
All others,											
HANDLING OF TOOLS OR OBJECTS—Total,	3		1		1	1					
Carrying or lifting objects (not loading or unloading),	1		1								
Handling of sharp objects,											
Tools in hands of injured persons,					1						
Tools in hands of fellow workman,	2					1					
POWER VEHICLES—Total,		1	1								
Derailment—replacing cars,											
Fell from, over or into,			1								
Struck by car or engine,		1									

TABLE NO 10.—Continued

Cause.	Class of Industry.										
	Building and contracting.	Chemicals and allied products.	Clay, glass and stone products.	Clothing manufacture.	Food and kindred products.	Leather and rubber goods.	Liquors and beverages.	Lumber and its remanufacture.	Paper and printing industries.	Textiles.	Laundries.
RUNNING INTO OR STRIKING AGAINST OBJECTS—Total,							1				
MISCELLANEOUS—Total,											
Flying objects (not from machines),											
NATURE OF INJURY—Total,	6	4	4		1	2	1		2	1	
Burns and scalds,											
Crushes and bruises,	2	1	2						1		
Cuts and lacerations,	2	1				2			1	1	
Fractures, sprains and dislocations,	2	2	2		1		1				
Hernia,											
Blood poisoning,											
Punctures,											
Unclassified,											
SOCIAL CONDITION—Total,	6	4	4		1	2	1		2	1	
Married,	6	3	3		1				1	1	
Single,						2			1		
Not given,		1	1				1				

Compensation.											
Amount paid and awarded,	$11,033	$8,600	$7,847		$2,111	$4,300	$2,010		$4,300	$2,146	
Sex.											
Male,	6	4	4		1	2	1		2	1	
Female,											
Total number of dependents,	12	1	11		5				1	3	
Total number of accidents—Year 1919,	6	4	4		1	2	1		2	1	
Total number of accidents—Year 1918,	9	3	5		1			1	2	2	
Total number of accidents—Year 1917,	1	1	2	1	3	2		1	2	2	1
Total number of accidents—Year 1916,	3		2		1		1	1		2	
Grand total number accidents,	19	8	13	1	6	4	2	3	6	7	1
Total loss of parts—1919,	6	4	4		1	2	1		2	1	
Total loss of parts—1918,	9	3	5		1			1	2	2	
Total loss of parts—1917,	1	1	2	1	3	2		1	2	2	1
Total loss of parts—1916,	3		2		1		1	1		2	
Grand total loss of parts,	19	8	13	1	6	4	2	3	6	7	1

Note: A difference of One Arm loss in Public Service appearing between this table and summary is due to this loss appearing on a Fatal Case which is not included here.

TABLE NO 10.—Continued

Cause.	Class of Industry.									Totals.
	Metals and metal products.	Mines and quarries.	Public service.	Tobacco and its products.	Miscellaneous.	Hotels and restaurants.	Mercantile establishments.	Jobbers and warehouses.	Municipalities.	
MACHINERY—Total,	9	6			4				1	29
Power and transmission apparatus,	3	3								9
Belts and pulleys,	1									3
Cogs, gears, etc.,	2	2								5
Ropes, cables and drums,		1								1
Elevators,	1									2
Cable breaking,										1
Defective equipment,	1									1
Cranes, hoisting apparatus, etc.,	1				2					5
Cable catching person,					1					1
Struck by load or tackle (not falling),	1									2
All others,					1					2

Working machines,	4	3			2				1	13
Adjusting machine or work,		1								1
Cleaning,	1				1					3
Operating or feeding,	2				1					4
Repairing,		1								1
Starting or stopping,	1	1							1	3
All others,										1
EXPLOSIVES, ELECTRICITY, FIRES, HOT OR CORROSIVE SUBSTANCES—Total,			1							1
Electricity,			1							1
FALLING OBJECTS—Total,		4								4
Rock or earth,		1								1
Fall of roof (mines),		3								3
FALL OF PERSONS—Total,	1	2	2						1	9
From ladder,									1	1
From scaffolds or platforms,		1	1							2
From other elevations,			1							2
Into other openings,		1								2
On level,										1
All others,	1									1
HANDLING OF TOOLS OR OBJECTS—Total,		1								7
Carrying or lifting objects (not loading or unloading),										2
Handling of sharp objects,		1								1
Tools in hands of injured persons,										1
Tools in hands of fellow workman,										3
POWER VEHICLES—Total,	4	6	4							16
Derailment—replacing cars,		1								1
Fell from, over or into,	1		1							3
Struck by car or engine,	3	5	3							12

TABLE NO 10.—Continued

Cause.	Class of Industry.									Totals.
	Metals and metal products.	Mines and quarries.	Public service.	Tobacco and its products.	Miscellaneous.	Hotels and restaurants.	Mercantile establishments.	Jobbers and warehouses.	Municipalities.	
RUNNING INTO OR STRIKING AGAINST OBJECTS—Total,					1					2
MISCELLANEOUS—Total,		1								1
Flying objects (not from machines),		1								1
NATURE OF INJURY—Total,	14	19	7		5				2	68
Burns and scalds,			1							1
Crushes and bruises,	8	11	3		1				1	30
Cuts and lacerations,	2	3			1					13
Fractures, sprains and dislocations,	4	5	3		3				1	24
Hernia,										
Blood poisoning,										
Punctures,										
Unclassified,										
SOCIAL CONDITION—Total,	14	19	7		5				2	68
Married,	10	10	6		1				2	44
Single,	4	8	1		4					20
Not given,		1								4

Compensation.										
Amount paid and awarded,	$28,716	$39,352	$15,050		$10,236				$3,924	$139,625
Sex.										
Male,	14	19	7		5				2	68
Female,										
Total number of dependents,	23	15	7		4				2	84
Total number of accidents—Year 1919,	14	19	7		5				2	68
Total number of accidents—Year 1918,	27	18	5		4		1			78
Total number of accidents—Year 1917,	16	13	3						1	49
Total number of accidents—Year 1916,	23	17	6				1		1	58
Grand total number accidents,	80	67	21		9		2		4	253
Total loss of parts—1919,	14	20	7		5				2	69
Total loss of parts—1918,	27	18	5		4		1			78
Total loss of parts—1917,	16	13	3						1	49
Total loss of parts—1916,	24	17	6				1		1	59
Grand total loss of parts,	81	68	21		9		2		4	255

Note: A difference of One Arm loss in Public Service appearing between this table and summary is due to this loss appearing on a Fatal Case which is not included here.

TABLE NO. 11.

This table shows the number of HAND losses and amount of Compensation awarded and paid for these losses during the year 1919. It also gives the Class of Industry in which the accident occurred, Cause of accident, Social Condition, etc. The totals for the preceding years are likewise given.

TABLE NO. 11.

Cause.	Class of Industry.									
	Building and contracting.	Chemicals and allied products.	Clay, glass and stone products.	Clothing manufacture.	Food and kindred products.	Leather and rubber goods.	Liquors and beverages.	Lumber and its remanufacture.	Paper and printing industries.	Textiles.
MACHINERY—Total,	7	4	5	1	17	6		12	5	7
Power and transmission apparatus,	2	1	1			1				1
Belts and pulleys,			1							
Chains and sprockets,										
Cogs, gears, etc.,	1					1				1
Operating or repairing apparatus (electrical),		1								
Ropes, cables and drums,	1									
Shafts and couplings,										
Elevators,			1		1	1		1		1
Cable breaking,					1			1		
Cable, caught by,						1				1
Car, struck by,										
Defective equipment,										
All others,			1							

Cranes, hoisting apparatus, etc.,										
Car striking person,										
Struck by load or tackle (not falling),										
All others,										
Working machines,	5	3	3	1	16	4		11	5	5
Adjusting machine or work,					2			3		
Cleaning,		1	1		3			1	1	2
Emery wheels (bursting),										
Flying objects,										
Oiling,	1	1			1					
Operating or feeding,	2	1	2	1	10	4		4	4	3
Repairing,	1									
Saws,	1							2		
Starting or stopping,										
All others,								1		
EXPLOSIVES, ELECTRICITY, FIRES, HOT OR CORROSIVE SUBSTANCES—Total,	1	3							1	
Electricity,										
Explosives,	1	2								
Dynamite, powder or nitro glycerine,	1	2								
Gasoline,										
Hot substances or flames,		1							1	
Hot water (scalds),		1								
Molten metal or slag (all others),										
Other hot substances,									1	
FALLING OBJECTS—Total,										
Fall of roof (mines),										
Objects dropped by other persons,										
Objects falling from buildings, trestles or scaffolds,										
All others,										

TABLE NO 11—Continued

Cause.	Class of Industry.									
	Building and contracting.	Chemicals and allied products.	Clay, glass and stone products.	Clothing manufacture.	Food and kindred products.	Leather and rubber goods.	Liquors and beverages.	Lumber and its remanufacture.	Paper and printing industries.	Textiles.
FALL OF PERSONS—Total,									1	
From ladder,										
From scaffolds or platforms,										
From other elevations,										
On level,										
All others,									1	
HANDLING OF TOOLS OR OBJECTS—Total,	2		2		1		1	2		
Carrying or lifting objects (not loading or unloading),	1		1				1	1		
Chipping or grinding,										
Handling of sharp objects,								1		
Loading or unloading,	1									
Tools in hands of injured person,					1					
Tools in hands of fellow workmen,			1							
POWER VEHICLES—Total,			1							
Collisions,										
Coupling or uncoupling cars,										
Derailment—replacing cars,										
Fell from or into,			1							
Improperly loaded ladles or cars,										
Loading or unloading material,										
Struck by car or engine,										

Struck by overhead or side obstruction,										
All others,										
RUNNING INTO OR STRIKING AGAINST OBJECTS,			1					1		
POISONOUS SUBSTANCES—Total,	1									
MISCELLANEOUS—Total,					1					
Animals,										
Doors, windows or gates (exclusive of elevator gates),					1					
Flying objects (not from machines),										
Intentional violence,										
All others,										
NATURE OF INJURY—Total,	11	7	8	1	19	6	1	15	7	7
Burns and scalds,		2		1					1	
Crushes and bruises,	6	3	1		10	5		4	5	6
Cuts and lacerations,	3	2	4		8	1		9	1	1
Fractures, sprains and dislocations,	1		3		1			1		
Hernia,										
Blood poisoning,	1						1	1		
Punctures,										
Unclassified,										
SOCIAL CONDITION—Total,	11	7	8	1	19	6	1	15	7	7
Married,	4	4	4		10	4	1	10	3	2
Single,	6	3	4	1	9	2		5	4	4
Not given,	1									1
Compensation.										
Amount paid and awarded,	$17,967	$11,642	$13,327	$1,010	$25,493	$9,052	$1,570	$20,443	$9,577	$7,759
Sex.										
Male,	11	7	7	1	17	5	1	13	6	5
Female,			1		2	1		2	1	2
Total number of dependents,	7	4	9		16	3		8		7

TABLE NO 11—Continued

Cause.	Class of Industry.									
	Building and contracting.	Chemicals and allied products.	Clay, glass and stone products.	Clothing manufacture.	Food and kindred products.	Leather and rubber goods.	Liquors and beverages.	Lumber and its remanufacture.	Paper and printing industries.	Textiles.
Total number of accidents—Year 1919,	11	7	8	1	19	6	1	15	7	7
Total number of accidents—Year 1918,	7	8	4	----------	15	5	1	14	10	11
Total number of accidents—Year 1917,	1	7	3	----------	4	7	----------	7	3	4
Total number of accidents—Year 1916,	3	2	4	----------	5	7	----------	3	6	7
Grand total number of accidents,	22	24	19	1	43	25	2	39	26	29
Total loss of parts—1919,	11	7	9	1	19	6	1	15	7	7
Total loss of parts—1918,	7	8	4	----------	15	5	1	14	10	11
Total loss of parts—1917,	1	7	3	----------	4	7	----------	7	3	4
Total loss of parts—1916,	3	2	5	----------	5	7	----------	3	6	7
Grand total loss of parts,	22	24	21	1	43	25	2	39	26	29

Note: A difference of Two Hand losses in the various Classes of Industry appearing between this table and summary is due to these losses appearing on Fatal Cases which are not included here.

TABLE NO 11—Continued

Cause.	Class of Industry.										Total.
	Laundries.	Metals and metal products.	Mines and quarries	Public service.	Tobacco and its products.	Miscellaneous.	Hotels and restaurants.	Mercantile establishments.	Jobber and warehouses.	Municipalities.	
MACHINERY—Total,	3	92	10	3		11		2			185
Power and transmission apparatus,		6	5	1		1					19
Belts and pulleys,		3									4
Chains and sprockets,				1							1
Cogs, gears, etc.,		1	2								6
Operating or repairing apparatus (electrical),											1
Ropes, cables and drums,		2	2			1					6
Shafts and couplings,			1								1
Elevators,		4		1							10
Cable breaking,		2									4
Cable, caught by,		1									3
Car, struck by,				1							1
Defective equipment,		1									1
All others,											1
Cranes, hoisting apparatus, etc.,		8									8
Car striking person,		5									5
Struck by load or tackle (not falling),		1									1
All others,		2									2

TABLE NO. 11—Continued

Cause.	Class of Industry.										Total.
	Laundries.	Metals and metal products.	Mines and quarries.	Public service.	Tobacco and its products.	Miscellaneous.	Hotels and restaurants.	Mercantile establishments.	Jobber and warehouses.	Municipalities.	
Working machines,	3	74	5	1		10		2			148
Adjusting machine or work,		7				1					13
Cleaning,		4	1			1					15
Emery wheels (bursting),		1									1
Flying objects,		2									2
Oiling,		3	1								7
Operating or feeding,	3	38	2	1		5		2			82
Repairing,		2	1								4
Saws,		9				1					13
Starting or stopping,		5				1					6
All others,		3				1					5
EXPLOSIVES, ELECTRICITY, FIRES, HOT OR CORROSIVE SUBSTANCES—Total,		4	13	1							23
Electricity,			1	1							2
Explosives,		2	12								17
Dynamite, powder or nitro glycerine,		2	11								16
Gasoline,			1								1

Hot substances or flames,		2									4
Hot water (scalds),											1
Molten metal or slag (all others),		2									2
Other hot substances,											1
FALLING OBJECTS—Total,		3	10	1		1					15
Fall of roof (mines),			9								9
Objects dropped by other persons,						1					1
Objects falling from buildings, trestles or scaffolds,		2		1							3
All others,		1	1								2
FALL OF PERSONS—Total,	1	9	2								13
From ladder,		3									3
From scaffolds or platforms,		1									1
From other elevations,		1									1
On level,	1	4	1								6
All others,			1								2
HANDLING OF TOOLS OR OBJECTS—Total,		14	2	3			1			1	29
Carrying or lifting objects (not loading or unloading),		9	1	2							16
Chipping or grinding,		1									1
Handling of sharp objects,											1
Loading or unloading,										1	2
Tools in hands of injured person,		2	1	1			1				6
Tools in hands of fellow workmen,		2									3
POWER VEHICLES—Total,		9	10	3							23
Collisions,		1									1
Coupling or uncoupling cars,		2	3								5
Derailment—replacing cars,			1								1
Fell from or into,		1	1	2							5
Improperly loaded ladles or cars,		1									1
Loading or unloading material,			1								1
Struck by car or engine,		3	2	1							6
Struck by overhead or side obstruction,			2								2
All others,		1									1

TABLE NO 11—Continued

Cause.	Class of Industry.										Total.
	Laundries.	Metals and metal products.	Mines and quarries.	Public service.	Tobacco and its products.	Miscellaneous.	Hotels and restaurants.	Mercantile establishments.	Jobber and warehouses.	Municipalities.	
RUNNING INTO OR STRIKING AGAINST OBJECTS,		1									3
POISONOUS SUBSTANCES—Total,											1
MISCELLANEOUS—Total,		3	1	1						1	7
Animals,			1								1
Doors, windows or gates (exclusive of elevator gates),											1
Flying objects (not from machines),		1									1
Intentional violence,										1	1
All others,		2		1							3
NATURE OF INJURY—Total,	4	134	48	11		12	1	2		2	296
Burns and scalds,	2	3	5								14
Crushes and bruises,	2	78	17	5		6		1		1	156
Cuts and lacerations,		39	19	4		5		1			97
Fractures, sprains and dislocations,		14	7	1		1				1	30
Hernia,											
Blood poisoning,							1				4
Punctures,				1							1
Unclassified,											

SOCIAL CONDITION—Total,	4	134	48	11	----------	12	1	2	----------	2	296
Married,	2	82	31	3	----------	6	1	1	----------	1	169
Single,	1	48	17	5	----------	4	----------	----------	----------	----------	113
Not given,	1	4	----------	3	----------	2	----------	1	----------	1	14
Compensation.											
Amount paid and awarded,	$3,700	$221,738	$80,116	$18,930	----------	$18,936	$875	$2,975	----------	$1,925	$467,035
Sex.											
Male,	----------	130	48	11	----------	10	1	1	----------	2	276
Female,	4	4	----------	----------	----------	2	----------	1	----------	----------	20
Total number of dependents,	4	116	45	----------	----------	5	----------	----------	----------	----------	218
Total number of accidents—Year 1919,	4	134	48	11	----------	12	1	2	----------	2	296
Total number of accidents—Year 1918,	----------	96	52	9	1	17	----------	4	2	1	251
Total number of accidents—Year 1917,	2	56	26	6	----------	6	----------	3	----------	1	136
Total number of accidents—Year 1916,	4	36	18	1	----------	2	1	2	----------	----------	101
Grand total number of accidents,	10	316	144	27	1	37	2	11	2	4	784
Total loss of parts—1919,	4	135	48	12	----------	12	1	2	----------	2	299
Total loss of parts—1918,	----------	91	61	9	1	17	----------	4	2	1	261
Total loss of parts—1917,	2	58	28	6	----------	6	----------	3	----------	1	140
Total loss of parts—1916,	4	36	19	1	----------	2	1	2	----------	----------	103
Grand total loss of parts,	10	320	156	28	1	37	2	11	2	4	803

Note: A difference of Two Hand losses in the various Classes of Industry appearing between this table and summary is due to these losses appearing on Fatal Cases which are not included here.

TABLE NO. 12.

This table shows the number of LEG losses and amount of Compensation awarded and paid for these losses during the year 1919. It also gives the Class of Industry in which the accident occurred, Cause of accident, Social Condition, etc. The totals for the preceding years are likewise given.

TABLE NO. 12.

Cause.	Class of Industry.									
	Building and contracting.	Chemicals and allied products.	Clay, glass and stone products.	Clothing manufacturing.	Food and kindred products.	Leather and rubber products.	Liquors and beverages.	Lumber and its remanufacture.	Paper and printing industries.	Textiles.
MACHINERY—Total,		1			1					1
Power and transmission apparatus,		1								
Fly wheels,		1								
Elevators,					1					1
Cable, caught by,										1
Car, caught by,										
Entering or leaving car,					1					
Fall of car,										
Cranes, hoisting apparatus, etc.,										
Car striking person,										
Falls from,										
Load falling,										
Run over by,										
Struck by load or tackle (not falling),										
All others,										

Working machines,										
Operating or feeding,										
EXPLOSIVES, ELECTRICITY, FIRES, HOT OR CORROSIVE SUBSTANCES—Total,		1								
Explosives,		1								
Dynamite, powder or nitro glycerine,		1								
FALLING OBJECTS—Total,	1					1				
Rock and earth,										
Collapse of scaffolds or stagings,	1									
Collapse of piled up material,										
Fall of roof (mines),										
Objects falling from truck or vehicles (not loading or unloading),										
Objects falling from buildings, trestles or scaffolds,						1				
FALL OF PERSONS—Total,	1			1					1	
From ladder,	1								1	
From vehicles,										
From other elevations,										
On level,										
Stairways,				1						
HANDLING OF TOOLS OR OBJECTS—Total,									1	
Carrying or lifting objects (not loading or unloading),										
Loading or unloading,									1	
Tools in hands of injured persons,										
POWER VEHICLES—Total,	2		1					1		
Collisions,	1									
Coupling or uncoupling cars,										
Derailment, replacing cars,										
Fell from, over or into,			1					1		
Not on track,	1									
Struck by car or engine,										
Struck by overhead or side obstruction,										
All others,										

TABLE NO. 12—Continued

Cause.	Class of Industry.									
	Building and contracting.	Chemicals and allied products.	Clay, glass and stone products.	Clothing manufacturing.	Food and kindred products.	Leather and rubber products.	Liquors and beverages.	Lumber and its remanufacture.	Paper and printing industries.	Textiles.
RUNNING INTO OR STRIKING AGAINST OBJECTS—										
MISCELLANEOUS—Total,	1									
Animals,										
Frost bites,										
All others,	1									
NATURE OF INJURY—Total,	5	2	1	1	1	1		1	2	1
Burns and scalds,										
Crushes and bruises,	2	1	1		1	1			1	
Cuts and lacerations,										
Fractures, sprains and dislocations,	3	1		1				1	1	1
Hernia,										
Blood poisoning,										
Punctures,										
Unclassified,										
SOCIAL CONDITION—Total,	5	2	1	1	1	1		1	2	1
Married,	2	1	1		1	1		1		
Single,	1	1		1					1	1
Not given,	2								1	

Compensation.										
Amount paid and awarded,	$9,856	$3,266	$2,150	$1,290	$1,473	$1,757		$2,150	$4,085	$1,559
Sex.										
Male,	5	2	1	1	1	1		1	1	1
Female,									1	
Total number of dependents,	3	1	1					2		
Total number of accidents, year 1919,	5	2	1	1	1	1		1	2	1
Total number of accidents, year 1918,	8	2			1					
Total number of accidents, year 1917,	4	1	3					1		
Total number of accidents, year 1916,	6		1		1					
Grand total number accidents,	23	5	5	1	3	1		2	2	1
Total loss of parts, 1919,	5	2	1	1	1	1		1	2	1
Total loss of parts, 1918,	8	2			1					
Total loss of parts, 1917,	4	1	3					1		
Total loss of parts, 1916,	6		1		1					
Grand total loss of parts,	23	5	5	1	3	1		2	2	1

NOTE:—A difference of nine leg losses in the various classes of industry appearing between this table and summary is due to these losses appearing on Fatal Cases which are not included here.

TABLE NO. 12—Continued

Cause.	Class of Industry.										Total.
	Laundries.	Metals and metal products.	Mines and quarries.	Public service.	Tobacco and its products.	Miscellaneous.	Hotels and restaurants.	Mercantile establishments.	Jobbers and warehouses.	Municipalities.	
MACHINERY—Total,		9	1	1		2	1				17
Power and transmission apparatus,											1
Fly wheels,											1
Elevators,		1				2	1				6
Cable, caught by,		1									2
Car, caught by,						1	1				2
Entering or leaving car,											1
Fall of car,						1					1
Cranes, hoisting apparatus, etc.,		7	1	1							9
Car striking person,		1									1
Falls from,		1									1
Load falling,		1									1
Run over by,		1									1
Struck by load or tackle (not falling),		2	1	1							4
All others,		1									1

Working machines,		1									1
Operating or feeding,		1									1
EXPLOSIVES, ELECTRICITY, FIRES, HOT OR CORROSIVE SUBSTANCES—Total,		1									2
Explosives,		1									2
Dynamite, powder or nitro glycerine,		1									2
FALLING OBJECTS—Total,		4	8								14
Rock and earth,			1								1
Collapse of scaffolds or stagings,											1
Collapse of piled up material,		3									3
Fall of roof (mines),			7								7
Objects falling from truck or vehicles (not loading or unloading),		1									1
Objects falling from buildings, trestles or scaffolds,											1
FALL OF PERSONS—Total,		3	1	1			1			1	10
From ladder,		2									4
From vehicles,				1							1
From other elevations,							1				1
On level,		1	1							1	3
Stairways,											1
HANDLING OF TOOLS OR OBJECTS—Total,		3				1					5
Carrying or lifting objects (not loading or unloading),		2									2
Loading or unloading,											1
Tools in hands of injured persons,		1				1					2
POWER VEHICLES—Total,		11	17	5		1					38
Collisions,		1	1	1							4
Coupling or uncoupling cars,			2								2
Derailment, replacing cars,		1	1								2
Fell from, over or into,		3	1	2		1					9
Not on track,		1									2
Struck by car or engine,		5	11	1							17
Struck by overhead or side obstruction,			1								1
All others,				1							1

TABLE NO. 12—Continued

Cause.	Class of Industry.										Total.
	Laundries.	Metals and metal products.	Mines and quarries.	Public service.	Tobacco and its products.	Miscellaneous.	Hotels and restaurants.	Mercantile establishments.	Jobbers and warehouses.	Municipalities.	
RUNNING INTO OR STRIKING AGAINST OBJECTS,				1							1
MISCELLANEOUS—Total,		1	1			1					4
Animals,						1					1
Frost bites,		1									1
All others,				1							2
NATURE OF INJURY—Total,		31	28	8		5	2			1	90
Burns and scalds,											
Crushes and bruises,		11	7	6		1					32
Cuts and lacerations,		3	5	1		1					10
Fractures, sprains and dislocations,		17	16	1		3	2				47
Hernia,										1	1
Blood poisoning,											
Punctures,											
Unclassified,											
SOCIAL CONDITION—Total,		31	28	8		5	2			1	90
Married,		20	12	4		4				1	48
Single,		7	15	2		1	1				31
Not given,		4	1	2			1				11

Compensation.											
Amount paid and awarded,	----------	$64,199	$54,666	$16,824	----------	$9,174	$2,473	----------	----------	$2,150	$177,072
Sex.											
Male,	----------	30	28	8	----------	5	2	----------	----------	1	88
Female,	----------	1	----------	----------	----------	----------	----------	----------	----------	----------	2
Total number of dependants,	----------	31	10	7	----------	3	----------	----------	----------	----------	58
Total number of accidents, year 1919,	----------	31	28	8	----------	5	2	----------	----------	1	90
Total number of accidents, year 1918,	----------	26	43	15	----------	4	1	3	----------	3	106
Total number of accidents, year 1917,	----------	24	24	14	----------	----------	----------	1	----------	----------	72
Total number of accidents, year 1916,	----------	35	28	13	----------	2	----------	----------	----------	----------	86
Grand total number accidents,	----------	116	123	50	----------	11	3	4	----------	4	354
Total loss of parts, 1919,	----------	32	28	8	----------	5	2	----------	----------	1	91
Total loss of parts, 1918,	----------	26	44	18	----------	4	1	3	----------	4	111
Total loss of parts, 1917,	----------	24	25	15	----------	----------	----------	1	----------	----------	74
Total loss of parts, 1916,	----------	36	28	15	----------	2	----------	----------	----------	----------	89
Grand total loss of parts,	----------	118	125	56	----------	11	3	4	----------	5	365

NOTE:—A difference of nine leg losses in the various classes of industry appearing between this table and summary is due to these losses appearing on Fatal Cases which are not included here.

TABLE NO. 13.

This table shows the number of FOOT losses and amount of Compensation awarded and paid for these losses during the year 1919. It also gives the Class of Industry in which the accident occurred, Cause of accident, Social Condition, etc. The totals for the preceding years are likewise given.

TABLE NO. 13.

Cause.	Class of Industry.									
	Building and contracting.	Chemicals and allied products.	Clay, glass and stone products.	Clothing manufacture.	Food and kindred products.	Leather and rubber goods.	Liquors and beverages.	Lumber and its remanufacture.	Paper and printing industries.	Textiles.
MACHINERY—Total,	1	1	1							
Power and transmission apparatus,										
Belts and pulleys,										
Chains and sprockets,										
Cogs, gears, etc.,										
Ropes, cables and drums,										
Shafts and couplings,										
Elevators,										
Cable—caught by,										
Cranes, hoisting apparatus, etc.,	1		1							
Car striking person,			1							
Falling objects (other than load),	1									
Load falling,										
Struck by load or tackle (not falling),										

Working machines,		1								
Adjusting machine or work,										
Cleaning,										
Flying objects,										
Oiling,										
Operating or feeding,										
Starting or stopping,										
All others,		1								
EXPLOSIVES, ELECTRICITY, FIRES, HOT OR CORROSIVE SUBSTANCES—Total,	1				1	1				
Corrosive substances,						1				
Electricity,	1									
Explosives,					1					
Dynamite, powder or nitroglycerine,					1					
Hot substances or flames,										
Molten metal or slag (all others),										
FALLING OBJECTS—Total,		1	1						1	
Rock and earth,			1							
Collapse of piled up material,									1	
Fall of roof (mines),										
Objects falling from trucks or vehicles (not loading or unloading),		1								
Objects falling from buildings, trestles or scaffolds,										
All others,										
FALL OF PERSONS—Total,	2	1	1					1		
From ladder,	1	1								
From scaffolds or platforms,			1							
From vehicles,								1		
From structures in course of erection,	1									
From other elevations,										
Into other openings,										
On level,										

Table No. 13—Continued.

Cause.	Class of Industry.									
	Building and contracting.	Chemicals and allied products.	Clay, glass and stone products.	Clothing manufacture.	Food and kindred products.	Leather and rubber goods.	Liquors and beverages.	Lumber and its remanufacture.	Paper and printing industries.	Textiles.
HANDLING OF TOOLS OR OBJECTS—Total,			1							
Carrying or lifting objects (not loading or unloading),										
Loading or unloading,										
Tools in hands of injured person,			1							
Tools in hands of fellow workmen,										
POWER VEHICLES—Total,	2		2		1					
Collisions,										
Coupling or uncoupling cars,										
Derailment—replacing cars,										
Fell from, over or into,										
Loading or unloading material,	2									
Not on track,					1					
Struck by car or engine,			1							
Struck by overhead or side obstruction,										
All others,			1							
RUNNING INTO OR STRIKING AGAINST OBJECTS—Total,										
MISCELLANEOUS—Total,										
Frost bites,										
All others,										

NATURE OF INJURY—Total,	6	3	6		2	1		1	1	
Burns and scalds,	1					1				
Crushes and bruises,			4		1					
Cuts and lacerations,	1									
Fractures, sprains and dislocations,	4	3	2		1			1	1	
Hernia,										
Blood poisoning,										
Punctures,										
Unclassified,										
SOCIAL CONDITION—Total,	6	3	6		2	1		1	1	
Married,	5	3	5		2	1			1	
Single,	1		1					1		
Not given,										
Compensation.										
Amount paid and awarded,	$7,988	$4,277	$9,000		$3,000	$969		$457	$1,040	
Sex.										
Male,	6	3	6		2	1		1	1	
Female,										
Total number of dependents,	11	6	4						6	
Total number of accidents—Year 1919,	6	3	6		2	1		1	1	
Total number of accidents—Year 1918,	13	3	6		3	1		1		
Total number of accidents—Year 1917,	5						1		1	1
Total number of accidents—Year 1916,			2							1
Grand total number of accidents,	24	6	14		5	2	1	2	2	2
Total loss of parts—1919,	6	3	6		2	1		1	1	
Total loss of parts—1918,	13	3	6		3	1		1		
Total loss of parts—1917,	5						1		1	1
Total loss of parts—1916,			2							1
Grand total loss of parts,	24	6	14		5	2	1	2	2	2

Table No. 13—Continued.

Cause.	Class of Industry.										Total.
	Laundries.	Metals and metal products.	Mines and quarries.	Public service.	Tobacco and its products.	Miscellaneous.	Hotels and restaurants.	Mercantile establishments.	Jobbers and warehouses.	Municipalities.	
MACHINERY—Total,		17	7	2		2					31
Power and transmission apparatus,		3	2								5
Belts and pulleys,		1									1
Chains and sprockets,			1								1
Cogs, gears, etc.,		1									1
Ropes, cables and drums,			1								1
Shafts and couplings,		1									1
Elevators,		2									2
Cable—caught by,		2									2
Cranes, hoisting apparatus, etc.,		10	2			1					15
Car striking person,		2									3
Falling objects (other than load),		1									2
Load falling,		6	1								7
Struck by load or tackle (not falling),		1	1			1					3

Working machines,		2	3	2		1					9
Adjusting machine or work,		1									1
Cleaning,						1					1
Flying objects,			1								1
Oiling,			1								1
Operating or feeding,			1								1
Starting or stopping,				2							2
All others,		1									2
EXPLOSIVES, ELECTRICITY, FIRES, HOT OR CORROSIVE SUBSTANCES—Total,			2	1							6
Corrosive substances,											1
Electricity,											1
Explosives,			2								3
Dynamite, powder or nitroglycerine,			2								3
Hot substances or flames,				1							1
Molten metal or slag (all others),				1							1
FALLING OBJECTS—Total,		7	29	1							40
Rock and earth,			8								9
Collapse of piled up material,		3									4
Fall of roof (mines),			20								20
Objects falling from trucks or vehicles (not loading or unloading),		1									2
Objects falling from buildings, trestles or scaffolds,		1	1	1							3
All others,		2									2
FALL OF PERSONS—Total,		3	2			1					11
From ladder,						1					3
From scaffolds or platforms,		1	1								3
From vehicles,											1
From structures in course of erection,											1
From other elevations,		1									1
Into other openings,		1									1
On level,			1								1

Table No. 13—Continued.

Cause.	Class of Industry.										Total.
	Laundries.	Metals and metal products.	Mines and quarries.	Public service.	Tobacco and its products.	Miscellaneous.	Hotels and restaurants.	Mercantile establishments.	Jobbers and warehouses.	Municipalities.	
HANDLING OF TOOLS OR OBJECTS—Total,		4	4	2							11
Carrying or lifting objects (not loading or unloading),		2	1	2							5
Loading or unloading,			1								1
Tools in hands of injured person,		2	1								4
Tools in hands of fellow workmen,			1								1
POWER VEHICLES—Total,		19	29	8		2					63
Collisions,		1	2	1							4
Coupling or uncoupling cars,		3	2	3							8
Derailment—replacing cars,			3								3
Fell from, over or into,		5	4	2							11
Loading or unloading material,		1	1	1		1					6
Not on track,				1							2
Struck by car or engine,		8	15			1					25
Struck by overhead or side obstruction,		1	2								3
All others,											1
RUNNING INTO OR STRIKING AGAINST OBJECTS—Total,		1									1
MISCELLANEOUS—Total,		1						2			3
Frost bites,								2			2
All others,		1									1

NATURE OF INJURY—Total,		49	72	13		5		1			160
Burns and scalds,		1		2							5
Crushes and bruises,		22	38	10		2					77
Cuts and lacerations,		6	7	1		2					17
Fractures, sprains and dislocations,		20	27			1					60
Hernia,											
Blood poisoning,											
Punctures,											
Unclassified,								1			1
SOCIAL CONDITION—Total,		49	72	13		5		1			160
Married,		29	44	8		2					100
Single,		16	26	3		2					49
Not given,		4	2	2		1		1			11
Compensation.											
Amount paid and awarded,		$73,087	$102,309	$17,741		$6,318		$3,250			$229,436
Sex.											
Male,		49	72	13		5		1			160
Female,											
Total number of dependents,		41	45	12							125
Total number of accidents—Year 1919,		49	72	13		5		1			160
Total number of accidents—Year 1918,		47	62	14		4					154
Total number of accidents—Year 1917,		22	21	5		2					58
Total number of accidents—Year 1916,		15	13	11		1		1			44
Grand total number of accidents,		133	168	43		12		2			416
Total loss of parts—1919,		52	73	14		5		2			166
Total loss of parts—1918,		47	64	14		4					156
Total loss of parts—1917,		23	22	5		2					60
Total loss of parts—1916,		15	13	12		1		1			45
Grand total loss of parts,		137	172	45		12		3			427

Note: A difference of four feet losses in the various Classes of Industry appearing between this table and summary is due to these losses appearing on Fatal Cases which are not included here.

TABLE NO. 14.

This is a compilation which shows the relative severity of the Compensation cases for the year 1919 to Cause and Degree by Industry Groups.

TABLE NO. 14.

Industry—Cause.	Fatal.	Major Dismemberment.					Fatal and permanent.	Temporary compensable.	Total cases.	Total severity.	Severity per case.
		Eye.	Arm.	Hand.	Leg.	Foot.					
	150	45	100	75	90	60		1			
BUILDING AND CONTRACTING:											
All machinery,	15	10	2	7		1	35	357	392	3,842	9.90
Transmission,	1		1	2			4	54	58	455	7.83
Elevators,	3						3	16	19	466	24.53
Cranes, etc.,	9		1			1	11	94	105	1,604	15.28
Working machines,	2	10		5			17	193	210	1,318	6.28
Explosives,	7	5		1			13	21	34	1,371	43.21
Electricity,	9					1	10	8	18	1,418	78.78
Hot and corrosive substances,	4	2					6	61	77	751	9.76
Falling objects,	25	1			1		27	449	476	4,334	9.11
Fall of person,	40	1	1		1	2	45	820	865	7,175	8.29
Handling,	6	3	3	2			14	928	942	2,413	2.56
Power vehicles,	29	1			2	2	34	288	322	4,983	15.48
Stepping on, or running into,								153	153	153	1.00
Miscellaneous,	15	6		1	1		23	189	201	2,874	14.30
Total,	150	29	6	11	5	6	207	3,275	3,482	29,315	8.42
Number per 1,000 cases,	43.08	8.33	1.72	3.16	1.44	1.72	59.45	940.55	1,000	8,419	
CHEMICALS AND ALLIED PRODUCTS:											
All machinery,	9	3	3	4	1	1	21	140	161	2,375	14.75
Transmission,	3			1	1		5	24	29	639	22.03
Elevators,	3		1				4	5	9	555	61.67
Cranes, etc.,			1				1	15	16	115	7.19
Working machines,	2	3	1	3		1	10	96	106	916	8.64
Explosives,	23	2		2	1		28	28	56	3,808	68.00
Electricity,	2						2		2	300	150.00
Hot and corrosive substances,	13	1		1			15	88	103	2,158	20.95
Falling objects,							1	60	61	120	1.97

Fall of person,	8					1	9	159	168	1,419	8.45
Handling,		1				1	1	232	233	277	1.19
Power vehicles,	6		1				7	71	78	1,071	13.76
Stepping on, or running into,	1						1	30	31	189	4.81
Miscellaneous,	12	7					19	79	98	2,149	22.38
Total,	74	14	4	7	2	3	104	887	991	13,992	14.53
Number per 1,000 cases,	74.67	14.13	4.03	7.06	2.02	3.03	104.94	895.06	1,000	14,028	
CLAY, GLASS AND STONE PRODUCTS:											
All machinery,	8	8	1	5		1	23	167	190	2,262	11.91
Transmission,	1			1			2	29	31	254	8.19
Elevators,	2	1		1			4	7	11	427	38.82
Cranes, etc.,	1					1	2	13	15	223	14.87
Working machines,	2	7	1	3			13	118	131	1,058	8.08
Explosives,	3						3	15	18	465	25.83
Electricity,	1						1	6	7	156	22.29
Hot and corrosive substances,	1						1	31	32	181	5.66
Falling objects,	8					1	9	161	170	1,421	8.36
Fall of person,	5		1			1	7	142	149	1,052	7.06
Handling,	3	1	1	2		1	8	487	495	1,292	2.61
Power vehicles,	7		1	1	1	2	12	133	145	1,568	10.81
Stepping on, or running into,				1			1	53	54	128	2.37
Miscellaneous,	12	4					16	63	79	2,043	25.86
Total,	48	13	4	9	1	6	81	1,258	1,339	10,568	7.89
Number per 1,000 cases,	35.85	9.71	2.98	6.72	0.75	4.48	60.49	939.51	1,000	7,892	
CLOTHING MANUFACTURE:											
All machinery,	2			1			3	148	151	523	3.46
Transmission,	1						1	15	16	165	10.32
Elevators,	1						1	10	11	160	14.54
Cranes, etc.,											
Working machines,				1			1	123	124	198	1.60
Explosives,											
Electricity,											
Hot and corrosive substances,	2						2	7	9	307	34.11
Falling objects,								10	10	10	1.00
Fall of person,					1		1	48	49	138	2.82
Handling,		1					1	69	70	114	1.63
Power vehicles,								5	5	5	1.00
Stepping on, or running into,	1						1	22	23	172	7.47
Miscellaneous,		1					1	23	24	68	2.83
Total,	5	2		1	1		9	332	341	1,487	4.36
Number per 1,000 cases,	14.66	5.87		2.93	2.93		26.39	973.61	1,000	4,361	

TABLE NO. 14—Continued.

Industry—Cause.	Fatal.	Major Dismemberment. Eye.	Arm.	Hand.	Leg.	Foot.	Fatal and permanent.	Temporary compensable.	Total cases.	Total severity.	Severity per case.
	150	45	100	75	90	60		1			
FOOD AND KINDRED PRODUCTS:											
All machinery,	8	1		17	1		27	273	300	2,863	9.61
Transmission,								23	23	23	1.00
Elevators,	5			1	1		7	27	34	942	27.71
Cranes, etc.,								9	9	9	1.00
Working machines,	3	1		16			20	213	233	1,968	8.19
Explosives,	1					1	2	11	13	221	17.00
Electricity,								3	3	3	1.00
Hot and corrosive substances,		2					2	52	54	142	2.63
Falling objects,	2						2	55	57	355	6.23
Fall of person,	8						8	228	236	1,428	6.05
Handling,	3		1	1			5	401	406	1,026	2.53
Power vehicles,	6	1				1	8	98	106	1,103	10.41
Stepping on, or running into,								32	32	32	1.00
Miscellaneous,	5	4		1			10	78	88	1,083	12.31
Total,	33	8	1	19	1	2	64	1,231	1,295	8,276	6.39
Number per 1,000 cases,	25.48	6.18	0.77	14.66	0.77	1.54	49.42	950.58	1,000	6,391	
LEATHER AND RUBBER GOODS:											
All machinery,	3	1		6			10	213	223	1,158	5.19
Transmission,				1			1	7	8	82	10.25
Elevators,	2			1			3	15	18	390	21.67
Cranes, etc.,								2	2	2	1.00
Working machines,	1	1		4			6	189	195	684	3.51
Explosives,								2	2	2	1.00
Electricity,								3	3	3	1.00
Hot and corrosive substances,	1					1	2	18	20	228	11.40
Falling objects,					1		1	12	13	102	7.85

Fall of person,			1				1	66	67	166	2.48
Handling,	1		1				2	158	160	408	2.55
Power vehicles,	3						3	13	16	463	28.94
Stepping on, or running into,	1						1	17	18	167	9.28
Miscellaneous,	2	2					4	28	32	418	13.06
Total,	11	3	2	6	1	1	24	530	554	3,115	5.62
Number per 1,000 cases,	19.86	5.42	3.61	10.83	1.80	1.80	43.32	956.68	1,000	5,623	
LIQUORS AND BEVERAGES:											
All machinery,	1						1	47	48	197	4.10
Transmission,								1	1	1	1.00
Elevators,	1						1	4	5	154	30.80
Cranes, etc.,											
Working machines,								42	42	42	1.00
Explosives,	1	1					2	9	11	204	18.55
Electricity,								1	1	1	1.00
Hot and corrosive substances,	2						2	15	17	315	18.53
Falling objects,								13	13	13	1.00
Fall of person,	4						4	77	81	677	8.36
Handling,	2			1			3	87	90	462	51.33
Power vehicles,	2						2	24	26	324	12.46
Stepping on, or running into,			1				1	4	5	104	20.80
Miscellaneous,	2						2	15	17	315	18.53
Total,	14	1	1	1			17	292	309	2,612	8.45
Number per 1,000 cases,	45.30	3.24	3.24	3.24			55.02	944.98	1,000	8,453	
LUMBER AND ITS REMANUFACTURE:											
All machinery,	7	5		12			24	570	594	2,745	4.62
Transmission,	1						1	19	20	169	8.45
Elevators,	1			1			2	10	12	235	19.58
Cranes, etc.,	1						1	7	8	157	19.63
Working machines,	4	5		11			20	534	554	2,184	3.94
Explosives,								5	5	5	1.00
Electricity,											
Hot and corrosive substances,								13	13	13	1.00
Falling objects,	8						8	107	115	1,307	11.37
Fall of person,	3					1	4	163	167	673	4.03
Handling,	2	3		2			7	423	430	1,008	2.34
Power vehicles,	8				1		9	71	80	1,361	17.01
Stepping on, or running into,				1			1	36	37	111	3.00
Miscellaneous,	1	9					10	77	87	632	7.26
Total,	29	17		15	1	1	63	1,465	1,528	7,855	5.14
Number per 1,000 cases,	18.98	11.13		9.82	0.65	0.65	41.23	958.77	1,000	5,141	

TABLE NO. 14—Continued.

Industry—Cause.	Fatal.	Major Dismemberment. Eye.	Arm.	Hand.	Leg.	Foot.	Fatal and permanent.	Temporary compensable.	Total cases.	Total severity.	Severity per case.
	150	45	100	75	90	60	----------	1	----------	----------	----------
PAPER AND PRINTING INDUSTRIES:											
All machinery,	3	1	2	5	----------	----------	11	344	355	1,414	3.98
Transmission,	1	----------	1	----------	----------	----------	2	20	22	270	12.27
Elevators,	----------	----------	----------	----------	----------	----------	----------	16	16	16	1.00
Cranes, etc.,	----------	----------	----------	----------	----------	----------	----------	2	2	2	1.00
Working machines,	2	1	1	5	----------	----------	9	306	315	1,126	3.57
Explosives,	----------	----------	----------	----------	----------	----------	----------	2	2	2	1.00
Electricity,	----------	----------	----------	----------	----------	----------	----------	2	2	2	1.00
Hot and corrosive substances,	----------	----------	----------	1	----------	----------	1	22	23	97	4.22
Falling objects,	----------	----------	----------	----------	----------	1	1	22	23	82	3.56
Fall of person,	6	----------	----------	1	1	----------	8	79	87	1,144	13.15
Handling,	1	1	----------	----------	1	----------	3	119	122	404	3.31
Power vehicles,	3	----------	----------	----------	----------	----------	3	43	46	493	10.72
Stepping on, or running into,	----------	----------	----------	----------	----------	----------	----------	19	19	19	1.00
Miscellaneous,	1	----------	----------	----------	----------	----------	1	17	18	167	9.28
Total,	14	2	2	7	2	1	28	669	697	3,824	5.49
Number per 1,000 cases,	20.09	2.87	2.87	10.04	2.87	1.43	40.17	959.83	1,000	5,486	----------
TEXTILES:											
All machinery,	7	1	1	7	1	----------	17	355	372	2,165	5.82
Transmission,	----------	----------	1	1	----------	----------	2	40	42	215	5.12
Elevators,	4	----------	----------	1	1	----------	6	13	19	778	40.95
Cranes, etc.,	----------	1	----------	----------	----------	----------	1	3	4	48	12.00
Working machines,	3	----------	----------	5	----------	----------	8	298	306	823	2.69
Explosives,	----------	----------	----------	----------	----------	----------	----------	2	2	2	1.00
Electricity,	1	----------	----------	----------	----------	----------	1	1	2	151	70.50
Hot and corrosive substances,	1	----------	----------	----------	----------	----------	1	28	29	178	6.14
Falling objects,	----------	----------	----------	----------	----------	----------	----------	27	27	27	1.00

Fall of person,	4						4	136	140	736	5.26
Handling,	1	1					2	133	135	328	2.43
Power vehicles,	1						1	15	16	165	10.32
Stepping on, or running into,	2						2	36	38	336	8.84
Miscellaneous,	1	1					2	43	45	238	5.29
Total,	18	3	1	7	1		30	776	806	4,326	5.37
Number per 1,000 cases,	22.33	3 72	1.24	8.69	1.24		37.22	962.78	1,000	5.367	
LAUNDRIES:											
All machinery,				3			3	39	42	264	6.29
Transmission,											
Elevators,								1	1	1	1.00
Cranes, etc.,											
Working machines,				3			3	38	41	263	6.41
Explosives,											
Electricity,											
Hot and corrosive substances,								7	7	7	1.00
Falling objects,								2	2	2	1.00
Fall of person,								10	10	10	1.00
Handling,								10	10	10	1.00
Power vehicles,	1						1	6	7	156	22.28
Stepping on, or running into,								1	1	1	1.00
Miscellaneous,								5	5	5	1.00
Total,	1			3			4	80	84	455	5.42
Number per 1,000 cases,	11.91			35.71			47.62	952.38	1,000	5,417	
METALS AND METAL PRODUCTS:											
All machinery,	114	106	9	92	9	17	347	3,800	4,147	35,300	8.51
Transmission,	9	1	3	6		3	22	197	219	2,522	11.52
Elevators,	11	3	1	4	1	2	22	87	109	2,482	22.77
Cranes, etc.,	55	3	1	8	7	10	84	927	1,011	11,542	11.42
Working machines,	38	99	4	74	1	2	218	2,579	2,797	18,894	6.76
Explosives,	19	11		2	1		33	141	174	3,726	21.41
Electricity,	3	1					14	81	95	2,076	21.85
Hot and corrosive substances,	30	7		2			39	1,275	1,314	6,240	4.75
Falling objects,	41	4		3	4	7	59	1,517	1,576	8,852	5.62
Fall of person,	48	3	1	9	3	3	67	1,390	1,457	9,950	6.83
Handling,	25	30		14	3	4	76	5,185	5,261	11,845	2.25
Power vehicles,	75	1	4	9	11	19	119	924	1,043	15,424	14.79
Stepping on, or running into,	2	2		1		1	6	432	438	957	2.18
Miscellaneous,	45	54		3	1	1	104	537	641	10,092	15.74
Total,	412	219	14	135	32	52	864	15,282	16,146	104,462	6.47
Number per 1,000 cases,	25.52	13.56	0.87	8.36	1.98	3.22	53.51	946.49	1,000	6,470	

Table No. 14—Continued.

Industry—Cause.	Fatal.	Major Dismemberment.					Fatal and permanent.	Temporary compensable.	Total cases.	Total severity.	Severity per case.
		Eye.	Arm.	Hand.	Leg.	Foot.					
	150	45	100	75	90	60	----------	1	----------	----------	----------
MINES AND QUARRIES:											
All machinery,	46	77	6	10	1	7	147	891	1,038	13,116	12.64
Transmission,	10	4	3	5	----------	2	24	242	266	2,717	10.21
Elevators,	8	1	----------	----------	----------	----------	9	43	52	1,288	24.77
Cranes, etc.,	4	----------	----------	----------	1	2	7	32	39	842	21.59
Working machines,	18	72	3	5	----------	3	101	570	671	7,365	10.98
Explosives,	224	59	----------	12	----------	2	297	838	1,135	38,113	33.58
Electricity,	21	----------	----------	1	----------	----------	22	92	114	3,317	29.10
Hot and corrosive substances,	7	1	----------	----------	----------	----------	8	153	161	1,248	7.75
Falling objects,	540	19	4	10	8	29	610	5,994	6,604	91,459	13.85
Fall of person,	34	2	2	2	1	2	43	1,068	1,111	6,818	6.14
Handling,	14	18	1	2	----------	4	39	3,871	3,910	7,271	1.86
Power vehicles,	224	4	6	10	17	29	290	4,591	4,881	42,991	8.81
Stepping on, or running into,	3	----------	----------	----------	----------	----------	3	401	404	851	2.11
Miscellaneous,	41	85	1	1	1	----------	129	977	1,106	11,217	10.14
Total,	1,154	265	20	48	28	73	1,588	18,876	20,464	216,401	10.57
Number per 1,000 cases,	56.39	12.95	0.98	2.34	1.37	3.57	77.60	922.40	1,000	10,575	----------
PUBLIC SERVICE:											
All machinery,	14	14	1	3	1	2	35	375	410	3,640	8.88
Transmission,	2	----------	----------	1	----------	----------	3	33	36	408	11.33
Elevators,	----------	3	1	1	----------	----------	5	15	20	415	20.75
Cranes, etc.,	5	----------	----------	----------	1	----------	6	54	60	494	14.90
Working machines,	5	11	----------	1	----------	2	19	273	292	1,713	5.87
Explosives,	2	----------	----------	----------	----------	----------	2	30	32	.330	10.31
Electricity,	42	----------	----------	1	----------	----------	43	85	128	6,460	50.46
Hot and corrosive substances,	12	2	----------	----------	----------	1	15	111	126	2,061	16.36
Falling objects,	8	----------	----------	1	----------	1	10	269	279	1,604	5.75

Fall of person,	12		2		1		15	549	564	2,639	4.68
Handling,	6	4		3		2	15	1,169	1,184	2,594	2.19
Power vehicles,	199		4	3	5	8	219	656	875	32,061	36.64
Stepping on, or running into,	1				1		2	104	106	344	3.25
Miscellaneous,	20	14		1			35	166	201	3,871	19.26
Total,	316	34	7	12	8	14	391	3,514	3,905	55,604	14.24
Number per 1,000 cases,	80.92	8.71	1.79	3.07	2.05	3.59	100.13	899.87	1,000	14,239	
TOBACCO AND ITS PRODUCTS:											
All machinery,								15	15	15	1.00
Transmission,								1	1	1	1.00
Elevators,								3	3	3	1.00
Cranes, etc.,											
Working machines,								11	11	11	1.00
Explosives,											
Electricity,											
Hot and corrosive substances,								5	5	5	1.00
Falling objects,								2	2	2	1.00
Fall of person,								19	19	19	1.00
Handling,								18	18	18	1.00
Power vehicles,								4	4	4	1.00
Stepping on, or running into,								1	1	1	1.00
Miscellaneous,	1						1		1	150	150.00
Total,	1						1	64	65	214	3.29
Number per 1,000 cases,	15.38						15.38	984.62	1,000	3,294	
MISCELLANEOUS:											
All machinery,	26	14	4	11	2	2	59	507	566	6,562	11.59
Transmission,	1			1			2	31	33	256	7.76
Elevators,	7				2		9	26	35	1,256	35.89
Cranes, etc.,	12		2			1	15	79	94	2,139	22.75
Working machines,	4	14	2	10		1	31	368	399	2,608	6.54
Explosives,	3						3	16	19	466	24.53
Electricity,	4						4	8	12	608	50.77
Hot and corrosive substances,	1						1	56	57	206	3.61
Falling objects,	9	1		1			11	270	281	1,740	6.19
Fall of persons,	32	1				1	34	604	638	5,509	8.63
Handling,	4	6			1		11	614	625	1,574	2.52
Power vehicles,	15	1			1	2	19	146	165	2,651	16.07
Stepping on, or running into,	2	1	1				4	83	87	528	6.07
Miscellaneous,	12	25			1		38	200	238	3,215	13.51
Total,	108	49	5	12	5	5	184	2,504	2,688	23,059	8.58
Number per 1,000 cases,	40.18	18.23	1.86	4.46	1.86	1.86	68.45	931.55	1,000	8,578	

Table No. 14—Continued.

Industry—Cause.	Fatal.	Major Dismemberment. Eye.	Arm.	Hand.	Leg.	Foot.	Fatal and permanent.	Temporary compensable.	Total cases.	Total severity.	Severity per case.
	150	45	100	75	90	60		1			
HOTELS AND RESTAURANTS:											
All machinery,	4				1		5	23	28	713	25.46
Transmission,											
Elevators,	3				1		4	6	10	546	54.60
Cranes, etc.,											
Working machines,	1						1	17	18	167	9.28
Explosives,	1						1	9	10	159	15.90
Electricity,											
Hot and corrosive substances,								23	23	23	1.00
Falling objects,								2	2	2	1.00
Fall of person,	2				1		3	88	91	478	5.25
Handling,	1			1			2	73	75	298	3.97
Power vehicles,	1						1	1	2	151	75.50
Stepping on, or running into,								9	9	9	1.00
Miscellaneous,	1						1	23	24	173	7.21
Total,	10			1	2		13	251	264	2,006	7.60
Number per 1,000 cases,	37.88			3.79	7.57		49.24	950.76	1,000	7,598	
MERCANTILE ESTABLISHMENTS:											
All machinery,	4	1		2			7	229	236	1,024	4.34
Transmission,								6	6	6	1.00
Elevators,	4						4	32	36	632	17.56
Cranes, etc.,								1	1	1	1.00
Working machines,		1		2			3	190	193	385	1.99
Explosives,	2						2	6	8	306	38.25
Electricity,								1	1	1	1.00
Hot and corrosive substances,	1						1	16	17	166	9.76
Falling objects,	1						1	55	56	205	3.66

Fall of person,	4	1					5	342	347	987	2.84
Handling,	3	1					4	316	320	811	2.53
Power vehicles,	12						12	133	145	1,933	13.33
Stepping on, or running into,		1					1	50	51	95	1.86
Miscellaneous,	9					2	11	121	132	1,591	12.05
Total,	36	4		2		2	44	1,269	1,313	7,119	5.42
Number per 1,000 cases,	27.42	3.05		1.52		1.52	33.51	966.49	1,000	5,422	
JOBBERS AND WAREHOUSES:											
All machinery,	3						3	72	75	522	6.96
Transmission,	1						1		1	150	150.00
Elevators,	2						2	13	15	313	20.87
Cranes, etc.,								4	4	4	1.00
Working machines,								54	54	54	1.00
Explosives,	1						1	1	2	151	75.50
Electricity,											
Hot and corrosive substances,	1	2					3	5	8	245	30.63
Falling objects,								22	22	22	1.00
Fall of person,	3						3	89	92	539	5.86
Handling,	2						2	147	149	447	3.00
Power vehicles,	1						1	57	58	207	3.57
Stepping on, or running into,	1						1	9	10	159	15.90
Miscellaneous,		1					1	21	22	66	3.00
Total,	12	3					15	423	438	2,358	5.38
Number per 1,000 cases,	27.40	6.85					34.25	965.75	1,000	5,384	
MUNICIPALITIES:											
All machinery,	2	1	1				4	18	22	463	21.04
Transmission,								1	1	1	1.00
Elevators,	1	1					2	3	5	198	39.60
Cranes, etc.,								1	1	1	1.00
Working machines,	1		1				2	13	15	263	17.53
Explosives,	1						1	8	9	158	17.56
Electricity,	2						2	1	3	301	100.33
Hot and corrosive substances,								8	8	8	1.00
Falling objects,	9						9	24	33	1,374	41.63
Fall of person,	5	1	1		1		8	113	121	1,098	9.07
Handling,	3	2		1			6	54	60	669	11.15
Power vehicles,	12						12	46	58	1,846	31.83
Stepping on, or running into,								12	12	12	1.00
Miscellaneous,	16	8					24	46	70	2,806	40.09
Total,	50	12	2	1	1		66	330	396	8,735	22.06
Number per 1,000 cases,	126.26	30.30	5.05	2.53	2.53		166.67	833.33	1,000	22,058	

Table No. 14—Continued.

Industry—Cause.	Fatal.	Major Dismemberment. Eye.	Arm.	Hand.	Leg.	Foot.	Fatal and permanent.	Temporary compensable.	Total cases.	Total severity.	Severity per case.
	150	45	100	75	90	60	----------	1	----------	----------	----------
ALL INDUSTRIES:											
All machinery,	276	243	29	185	17	31	781	8,584	9,365	81,084	8.66
Transmission,	31	5	9	19	1	5	70	743	813	8,333	10.25
Elevators,	58	9	2	10	1	2	82	358	440	10,823	24.60
Cranes, etc.,	87	4	5	8	9	15	128	1,243	1,371	17,283	12.61
Working machines,	80	225	13	148	1	9	482	6,225	6,707	42,280	6.30
Explosives,	288	78	----------	17	2	3	388	1,144	1,532	49,489	32.30
Electricity,	95	1	1	2	----------	1	100	291	391	14,496	37.07
Hot and corrosive substances,	76	17	----------	4	----------	2	99	2,006	2,105	14,591	6.93
Falling objects,	651	25	4	15	14	40	749	9,073	9,822	113,033	11.51
Fall of person,	218	9	9	13	10	11	270	6,189	6,459	42,729	6.62
Handling,	77	72	7	29	5	11	201	14,494	14,695	33,269	2.26
Power vehicles,	605	8	16	23	38	63	753	7,325	8,078	108,960	13.49
Stepping on, or running into,	14	4	2	3	1	1	25	1,504	1,529	4,350	2.85
Miscellaneous,	196	221	1	8	4	3	433	2,696	3,129	43,281	13.83
Total,	2,496	678	69	299	91	166	3.799	53,306	57,105	505,682	8.86
Number per 1,000 cases,	43.71	11.87	1.21	5.24	1.59	2.91	66.53	933.47	1,000	8,855	----------

TABLE NO. 15.

Table No. 15 shows a summary of the actual number of Compensable disabilities for the year 1919 by the Class of Industry to Fatal, Major Dismemberment, Permanent total, Temporary, etc.

TABLE NO. 15.

Disability.	Industry.																				
	Building and contracting.	Chemicals and allied products.	Clay, glass and stone products.	Clothing manufacture.	Food and kindred products.	Leather and rubber goods.	Liquors and beverages.	Lumber and its remanufacture.	Paper and printing industries.	Textiles.	Laundries.	Metals and metal products.	Mines and quarries.	Public service.	Tobacco and its products.	Miscellaneous.	Hotels and restaurants.	Mercantile establishments.	Jobbers and warehouses.	Municipalities.	All industries.
Fatal,	150	74	48	5	33	11	14	29	14	18	1	412	1,154	316	1	108	10	36	12	50	2,496
Eye,	29	14	13	2	8	3	1	17	2	3	------	219	265	34	------	49	------	4	3	12	678
Arm,	6	4	4	------	1	2	1	------	2	1	------	14	20	7	------	5	------	------	------	2	69
Hand,	11	7	9	1	19	6	1	15	7	7	3	135	48	12	------	12	1	2	------	1	299
Leg,	5	2	1	1	1	1	------	1	2	1	------	32	28	8	------	5	2	------	------	1	91
Foot,	6	3	6	------	2	1	------	1	1	------	------	52	73	14	------	5	------	2	------	------	166
Fatal and permanent,	207	104	81	9	64	24	17	63	28	30	4	864	1,588	391	1	184	13	44	15	66	3,799
Temporary,	3,275	887	1,258	332	1,231	53	292	1,465	669	776	80	15,282	18,876	3,514	64	2,504	251	1,269	423	330	53,306
Total,	3,482	991	1,339	341	1,295	554	309	1,528	697	806	84	16,146	20,464	3,905	65	2,688	264	1,313	438	396	57,105

TABLE NO. 16.

This table is a summary of Disabilities per 1,000 total Compensable cases for the year 1919 by the Class of Industry to Degree, Total Severity, and Severity per 1,000 cases.

TABLE NO. 16.

Disability.	Industry.										
	Building and contracting.	Chemicals and allied products.	Clay, glass and stone products.	Clothing manufacture.	Food and kindred products.	Leather and rubber goods.	Liquors and beverages.	Lumber and its remanufacture.	Paper and printing industries.	Textiles.	Laundries.
Fatal,	43	75	36	15	25	20	45	19	20	22	12
Eye,	8	14	10	6	6	5	3	11	3	4	----------
Arm,	2	4	3	----------	1	4	3	----------	3	1	----------
Hand,	3	7	7	3	15	11	3	10	10	9	36
Leg,	1	2	1	3	1	2	----------	1	3	1	----------
Foot,	2	3	4	----------	1	2	----------	1	1	----------	----------
Fatal and permanent,	59	105	61	27	49	44	54	42	40	37	48
Temporary,	941	895	939	973	951	596	946	958	960	963	952
All cases,	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Total severity,	29,315	13,902	10,568	1,487	8,276	3,115	2,612	7,855	3,824	4,326	455
Severity per 1,000 cases,	8,419	14,028	7,892	4,361	6,391	5,623	8,453	5,141	5,486	5,367	5,417

Table No. 16—Continued.

Disability.	Industry.										Rubinow Standard Table (approximate).
	Metals and metal products.	Mines and quarries.	Public service.	Tobacco and its products.	Miscellaneous.	Hotels and restaurants.	Mercantile establishments.	Jobbers and warehouses.	Municipalities.	All industries.	
Fatal,	26	56	81	15	40	38	27	27	126	44	24
Eye,	14	13	9	----------	18	----------	3	7	30	12	14
Arm,	1	1	2	----------	2	----------	----------	----------	5	1	4
Hand,	8	2	3	----------	4	4	2	----------	3	5	4
Leg,	2	1	2	----------	2	8	----------	----------	3	2	4
Foot,	3	4	4	----------	2	----------	2	----------	----------	3	1
Fatal and permanent,	54	77	101	15	68	50	34	34	167	67	51
Temporary,	946	922	899	985	932	950	966	966	833	933	949
All cases,	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Total severity,	104,462	216,401	55,604	214	23,059	2,006	7,119	2,358	8,735	505,682	242,520
Severity per 1,000 cases,	6,470	10,575	14,239	3,292	8,578	7,598	5,422	5,384	22,058	8,855	5,258

TABLE NO. 17.

A summary of the Compensable cases for the year 1919 for the total weighted severity is here shown, classified by Class of Industry to Cause, also showing the summary of the severity per case by the same classification.

TABLE NO. 17.

Cause.	Industry.										
	Building and contracting.	Chemicals and allied products.	Clay, glass and stone products.	Clothing manufacture.	Food and kindred products.	Leather and rubber goods.	Liquors and beverages.	Lumber and its remanufacture.	Paper and printing industries.	Textiles.	Laundries.
All machinery,	3,842	2,375	2,262	523	2,883	1,158	197	2,745	1,414	2,165	264
Transmission,	454	639	254	165	23	82	1	169	270	215	----------
Elevators,	466	555	427	160	942	390	154	235	16	778	1
Cranes, etc.,	1,604	115	223	----------	9	2	----------	157	2	48	----------
Working machines,	1,318	916	1,058	198	1,908	684	42	2,184	1,126	823	263
Explosives,	1,371	3,808	465	----------	221	2	204	5	2	2	----------
Electricity,	1,418	300	156	----------	3	3	1	----------	2	151	----------
Hot and corrosive substances,	751	2,158	181	307	142	228	315	13	97	178	7
Falling objects,	4,334	120	1,421	10	355	102	13	1,307	82	27	2
Fall of person,	7,175	1,419	1,052	138	1,428	166	677	673	1,144	736	10
Handling,	2,413	277	1,292	114	1,026	408	462	1,008	404	328	10
Power vehicles,	4,983	1,671	1,568	5	1,103	463	324	1,361	493	165	156
Stepping on and running into objects,	153	180	128	172	32	167	104	111	19	336	1
Miscellaneous,	2,874	2,194	2,043	68	1,083	418	315	632	167	238	5
Total,	29,315	13,902	10,568	1,487	8,276	3,115	2,612	7,855	3,824	4,326	455
Summary of Severity Per Case.											
All machinery,	10	15	12	3	10	5	4	5	4	6	6
Transmission,	8	22	8	10	1	10	1	8	12	5	----------
Elevators,	25	62	39	15	28	22	31	20	1	41	1
Cranes, etc.,	15	7	15	----------	1	1	----------	20	1	12	----------
Working machines,	6	9	8	2	8	4	1	4	4	3	6
Explosives,	43	68	26	----------	17	1	19	1	1	1	----------
Electricity,	79	150	22	----------	1	1	[illegible]	----------	[illegible]	71	----------

Hot and corrosive substances,	10	21	6	34	3	11	19	1	4	6	1
Falling objects,	9	2	8	1	6	8	1	11	4	1	1
Fall of person,	8	8	7	3	6	2	8	4	13	5	1
Handling,	3	1	3	2	3	3	51	2	3	2	1
Power vehicles,	15	14	11	1	10	29	12	17	11	10	22
Stepping on and running into objects,	1	5	2	7	1	9	21	3	1	9	1
Miscellaneous,	14	22	26	3	12	13	19	7	9	5	1
Total,	8	14	8	4	6	6	8	5	5	5	5

Table No. 17—Continued.

Cause.	Industry.										Percentage of total severity.	Percentage of total number of cases.
	Metals and metal products.	Mines and quarries.	Public service.	Tobacco and its products.	Miscellaneous.	Hotels and restaurants.	Mercantile establishments.	Jobbers and warehouses.	Municipalities.	All industries.		
All machinery,	35,300	13,116	3,640	15	6,562	713	1,024	522	463	81,084	16.0	16.4
Transmission,	2,522	2,717	408	1	256	--------	6	150	1	8,333	1.7	1.4
Elevators,	2,482	1,288	415	3	1,256	546	632	313	198	10,823	2.1	0.8
Cranes, etc.,	11,542	842	894	--------	2,139	--------	1	4	1	17,283	3.4	2.4
Working machines,	18,894	7,365	1,713	11	2,608	167	385	54	263	42,280	8.4	11.7
Explosives,	3,726	38,113	330	--------	466	159	306	151	158	49,489	9.8	2.7
Electricity,	2,076	3,317	6,460	--------	608	--------	1	--------	301	14,496	2.9	0.7
Hot and corrosive substances,	6,240	1,248	2,061	5	206	23	166	245	8	14,591	2.9	3.7
Falling objects,	8,852	91,459	1,604	2	1,740	2	205	22	1,374	113,033	22.4	17.2
Fall of person,	9,950	6,818	2,639	19	5,509	478	987	539	1,098	42,729	8.4	11.3
Handling,	11,845	7,271	2,594	18	1,574	298	811	447	669	33,269	6.6	25.7
Power vehicles,	15,424	42,991	32,061	4	2,651	151	1,933	207	1,846	108,960	21.5	14.1
Stepping on and running into objects,	957	851	344	1	528	9	95	159	12	4,350	0.9	2.7
Miscellaneous,	10,092	11,217	3,871	150	3,215	173	1,591	65	2,806	43.281	8.6	5.5
Total,	64,462	216,401	55,604	214	23,059	2,066	7,119	2,358	8,735	505,682	100.0	100.0
Summary of Severity Per Case.												
All machinery,	9	13	9	1	12	25	4	7	21	9	--------	--------
Transmission,	12	10	11	1	8	--------	1	150	1	10	--------	--------
Elevators,	23	25	21	1	36	55	18	21	40	25	--------	--------
Cranes, etc.,	11	22	15	--------	23	--------	1	1	1	13	--------	--------
Working machines,	7	11	6	1	7	9	2	1	18	6	--------	--------
Explosives,	21	34	10	--------	25	16	38	76	18	32	--------	--------
Electricity,	22	29	50	--------	51	--------	1	--------	100	37	--------	--------

Hot and corrosive substances,	5	8	10	1	4	-	10	31	1	7	--------	--------
Falling objects,	6	14	6	1	6	1	4	1	42	12	--------	--------
Fall of person,	7	6	5	1	9	5	3	6	9	7	--------	--------
Handling,	2	2	2	1	3	4	3	3	11	2	--------	--------
Power vehicles,	15	9	37	1	16	76	13	4	32	13	--------	--------
Stepping on and running into objects,	2	2	3	1	6	1	2	16	1	3	--------	--------
Miscellaneous,	16	10	19	150	14	7	12	3	40	14	--------	--------
Total,	6	11	14	3	9	8	5	5	22	9	--------	--------

TABLE NO. 18.

Table No. 18 shows a summary of Industrial Temporary Disability accident cases in which Compensation was incurred and amount of days lost, also showing the average days lost and average Compensation incurred per case for the year 1919 classified as to Day Groups by Part of Body injured.

TABLE NO. 18.

Day Groups.	Part Injured.									Number of cases.	Compensation incurred.	Average compensation per case.	Number of days lost.	Average days lost per case.
	Trunk.	Head and face.	Eyes.	Arms.	Hands.	Fingers.	Legs.	Feet.	Toes.					
15 days,	223	109	48	67	203	342	133	250	51	1,426	3,377	2.37	21,390	15.00
16 days,	284	135	87	95	287	476	205	338	107	2,014	6,405	3 18	32,224	16.00
17 days,	276	134	64	101	297	441	198	368	100	1,979	9,931	5.02	33,643	17.00
18 days,	270	119	55	89	240	413	172	346	82	1,786	12,227	6.85	32,148	18.00
19 days,	270	113	59	77	226	403	164	316	87	1,715	13,667	7.97	32,585	19.00
20 days,	58	23	16	15	33	72	19	60	7	303	2,952	9.74	6,060	20.00
21 days,	610	251	135	177	511	860	385	700	189	3,818	37,755	9.89	80,178	21.00
22 days,	282	88	46	84	189	391	182	289	72	1,623	19,008	11.71	35,706	22.00
23 days,	259	80	45	84	209	377	157	284	87	1,582	20,377	12.88	36,386	23.00
24 days,	271	98	56	72	209	351	169	277	81	1,584	23,375	14.76	38,016	24.00
25 days,	224	80	37	68	150	324	157	256	64	1,360	22,448	16.51	34,000	25.00
26 days,	220	78	34	48	144	285	119	225	59	1,212	21,520	17.76	31,512	26.00
27 days,	40	14	4	7	32	52	30	43	16	238	4,527	19.02	6,426	27.00
28 days,	524	149	71	173	379	661	310	535	143	2,945	56,649	19.24	82,460	28.00
29 days,	193	64	25	49	130	237	118	173	43	1,032	22,086	21.40	29,928	29.00
30 to 39 days,	1,671	517	216	562	1,143	2,171	924	1,573	397	9,174	260,347	28.38	321,531	35.05
40 to 49 days,	1,145	326	133	463	696	1,257	546	1,052	226	5,844	271,380	46.44	277,989	47.57
50 to 59 days,	693	224	78	280	375	753	361	592	102	3,458	193,967	56.09	194,182	56.15
60 to 69 days,	438	125	53	180	236	375	267	372	79	2,125	147,413	69.37	139,419	65.61
70 to 79 days,	349	120	42	142	197	312	248	314	45	1,769	145,199	82.08	132,009	74.62
80 to 89 days,	209	69	20	97	111	143	192	200	23	1,064	103,855	97.61	89,713	84.32
90 to 99 days,	201	66	15	81	70	130	170	138	25	896	100,248	111.88	84,441	94.24
100 to 109 days,	129	47	7	62	46	89	132	129	9	650	160,183	246.44	67,682	104.13
110 to 119 days,	108	44	11	47	52	63	112	88	18	543	75,774	139.55	62,265	114.56
120 to 129 days,	67	33	7	41	30	40	116	63	7	404	62,321	154.26	50,330	124.58
130 to 139 days,	57	21	5	22	19	38	93	51	4	310	52,109	168.09	41,520	133.94
140 to 149 days,	60	30	6	29	20	31	107	48	6	337	60,210	178.66	48,439	143.74
150 to 159 days,	49	13	2	13	14	10	84	37	2	224	42,591	190.14	34,565	154.31
160 to 169 days,	39	10	--------	18	16	25	93	36	1	238	49,572	208.29	39,040	164.03
170 to 179 days,	35	17	1	13	13	13	63	23	3	181	40,555	224.06	31,576	174.45
180 to 209 days,	73	25	6	33	21	36	167	64	4	429	107,169	249.81	82,815	193.04

210 to 239 days,	53	25	5	27	9	17	86	44	5	271	78,910	291.18	60,018	221.47
240 to 269 days,	29	10	1	18	9	11	86	31	3	198	62,630	316.31	50,196	253.52
270 to 299 days,	22	16		11	4	6	66	16	1	136	50,183	368.99	38,498	283.07
300 to 329 days,	16	10		7	6	5	40	17	2	103	43,901	426.22	32,457	315.12
330 to 359 days,	18	6	1	2	3	7	19	10	2	68	30,334	446.09	23,436	344.65
360 to 720 days,	60	19	5	27	10	5	111	31	3	271	160,917	593.79	130,241	480.59
721 to 1,080 days,	11	2			1		9	2		25	25,916	1,036.64	20,936	837.44
1,081 and over,	3			2			1			6	6,097	1,016.17	6,915	1,152.50
Total number of cases,	9,539	3,304	1,396	3,383	6,340	11,222	6,611	9,391	2,155	53,341				
Compensation incurred,	570,847	170,387	49,708	200,371	224,890	368,696	536,916	415,736	70,534		2,608,085			
Average compensation per case,	59.84	51.57	35.61	59.23	35.47	32.85	81.22	44.27	32.73			48.89		
Number of days lost,	500,103	165,262	53,892	192,528	251,461	426,531	483,451	440,392	79,195				2,592,815	
Average days lost per case,	52.43	50.02	38.60	56.91	39.66	38.01	73.13	46.90	36.75					48.61

Commonwealth of Pennsylvania

THE BULLETIN

OF THE

Department of Labor and Industry

CLIFFORD B. CONNELLEY
Commissioner

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SERIES OF 1920

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LETTER OF INVITATION.

House Caucus Room,

Harrisburg, Pa., February 17, 1920.

In pursuance of an invitation, issued by Commissioner Clifford B. Connelley of the Pennsylvania Department of Labor and Industry, a conference of the superintendents and the employment managers, representing the industries of Pennsylvania and the Department was held to consider and discuss how they might function more closely and definitely and how the Bureau of Employment of the Department, might render quicker and more specific service to the corporations.

The letter of invitation calling the conference was as follows:

February 7, 1920.

GENTLEMEN:

The Department of Labor and Industry through its Bureau of Employment, is now endeavoring to do for the employers and employes of Pennsylvania what it was the original aim of the Bureau to effect, when it was created in 1915. The war and the abnormal conditions produced by it in the larger commercial and industrial centers have made it nearly impossible for the Bureau to accomplish its real purpose.

The time has now come in Pennsylvania when unskilled as well as skilled labor is unprecedentedly scarce and the cost of the labor turnover is unduly high. The Bureau of Employment needs suggestions and advice from the larger employers who are directly interested in, and are continually confronted by, the general employment problems.

There are a number of State free employment offices in Pennsylvania under the direction of this Department. They have been created to serve both the employer and the employe. Their present need is to consider and discuss with you how they may function more closely and definitely with you and may render quicker and more specific service to the corporation which you represent.

I am, therefore, inviting the superintendent and the employment manager of your company to attend a one-day conference, which will be held on February 17, 1920, in the House Caucus Room, Capitol Building, Harrisburg, Pa. Their advice and cooperation are needed.

Kindly let me know a few days in advance if they will attend this conference.

Very truly yours,

(Signed) C. B. CONNELLEY,
Commissioner.

OPENING ADDRESS.

The conference was called to order, Commissioner Clifford B. Connelley presiding.

COMMISSIONER CONNELLEY. If you will pardon me for perhaps ten minutes I will try to tell you just why we called you here today and the position which we occupy in Pennsylvania from the laboring and the employment standpoint.

I thank you sincerely for leaving your many and pressing daily duties to come here this day to advise and consult with us and with one another as to how our Bureau of Employment through its several offices may function for your needs more rapidly, more specifically, and more adequately.

One of the most important matters in social life is employment for every one. Proper work and suitable employment are among the foundation stones of the structure of social order and peace. Regular work and regular pay mean food, homes, clothing, and well-ordered life for the individual and for the family. When every one is happily busy at his chosen vocation, there is little chance for mischief or social disorder to arise.

On the other hand, idleness and unemployment or irregular employment, soon breed trouble, social disorder, anarchy and chaos, as we see now in Russia. "The idle brain is the devil's workshop" is an old saying, long accepted among theologians. It is more true socially than we often realize or are ready to admit.

Idleness, irregular work, or unsuitable and uncertain odd jobs, mean cheaper, less, and less certain food, poorer and unstable homes, lack of sufficient clothing and badly ordered and more or less hazardous hand-to-mouth lives, which soon lead to hunger and distress. These abnormal and unsocial conditions are the fertile fields for disorder, strife, revolution, anarchy, and bolshevism. Hunger more than anything else drove Russia into bolshevism and will do the same thing in Austria, Poland, and Finland, unless food and employment are furnished to those starving countries.

To avoid these very conditions arising from unemployment and leading to social revolution, State Bureaus of Employment have been established by a number of our states during the last fifteen years. Their prime purpose is to preserve social order through stabilizing labor conditions in commerce, agriculture, and industry, and through a more economic distribution of labor where needed throughout the State.

No great and serious periods of unemployment arose and made large demands upon the employment bureaus of the states until the early part of 1914, when the entire country appeared to be confronted by a wide area and a long period of unemployment. But suddenly, almost over night, the war in Europe broke out and the face of the entire economic and labor world was changed.

Originally labor bureaus were founded by the state to find a job for the jobless man. Now labor bureaus exist and are working night and day to find men for the manless jobs. The entire situation is reversed. "The harvest indeed is ripe but the laborers are few."

This abundance of work and the acute shortage of competent labor in many lines have led to very serious social, economic, and industrial conditions and abuses. Labor is sought and recruited at tremendous turnover costs and damages. Corporations are enticing labor from one another, towns and cities are attracting labor from one place to another, one state does not hesitate to recruit labor quietly but openly from other states. All these conditions tend to economic disorder and distrust and add not a little to the cost of production. They react upon the laborer himself and make him more greedy in his demands and more unstable and careless in his work. They encourage him to auction frequently his services to the highest bidder and to change jobs often for very slight reasons.

I need not call you attention to the high costs of frequent turnover of your labor or to the serious situation in commerce, industry, and agriculture due to the scarcity of competent labor. You are daily confronted by these conditions and know them more intimately each in your own line, than anyone else can.

This country, as well as other countries of the world, is now passing through the most unusual and perplexing post-war conditions. Never before have this world and mankind experienced the trials and the tribulations of the last five years nor have they ever before been compelled to undertake the social and economic tasks now laid upon them. History furnishes no experience or precedents to go by. After the cataclysm of the Great War the entire world must be made over, but not after the old patterns. New conditions, social and economic, have arisen. New methods of procedure and new modes of thought are superseding those of the past. Everyone must feel and grope his way. Never before was there greater need of closer conference and cooperation in every line of human activity. Advice and counsel are needed from every source.

Employers and employes must learn to understand each other more thoroughly and must recognize more fully their mutual and common interests. Thus only can the present peculiar and dangerous attitude of labor toward its own interests and toward everything and everybody else be fully understood and wisely and justly modified.

The relation of the state to employer and to employe must be clearly and unmistakably defined. In the present employment situation, where there are wholly new conditions arising and almost no precedents to guide, the cooperation and counsel of every one seeking and using labor are seriously sought.

The Pennsylvania Bureau of Employment was established in 1915 as "a system of regulation of employers and of persons seeking employment." Its policy has always been to serve fairly and squarely both the employer and the employe. It has been occupied chiefly in finding men and women for the vacant and waiting jobs. In this effort it has not always and uniformly been successful.

The Bureau of Employment has also endeavored always to find the most suitable man or woman for the specific job. It has striven more and more for a better fitting of the man to the job. This is, as you all know, a most difficult task. In this matter, the Bureau has not always or uniformly worked up to its own expectations or to those of the employer. Here has been one of the keenest disappointments of the Bureau and here it has severely been criticised by the employers. Of course, mistakes in placements have been made. In placing large numbers, mistakes cannot be avoided. Errors occur through false or inaccurate information given to the Bureau by both the employer and the employe. Truthful information, accuracy of statement, and patience are needed on both sides.

The Bureau has also tried to render quick and prompt service to employer and employe. Many of the members of the Bureau work far into the night to find men for the waiting jobs. Here, again, the Bureau has been severely censured by the impatient employer and employe, because of the apparent long delay or slowness of the Bureau in filling the orders. This is an unavoidable condition in the present shortage of labor. Often suitable workers cannot immediately be found. Also, frequently a skilled or semi-skilled worker cannot at once be placed in a position best suited to his experience and training. Patience is here again needed.

The Bureau of Employment realizes as fully as you do the seriousness of the turnover situation in this country at the present time. It is attempting as far as possible to keep the man on his job and to prevent a change of jobs. It does not wish to make placements at high turnover cost. It considers keeping a man on his job, other conditions being satisfactory, fully as good as or better than a placement in a new job. Under no circumstances does the Bureau wish to aid or abet the increase of the labor turnover.

The State Bureaus of Employment do not command the respect and confidence from the employer which they should. Many competent and self-respecting workers will not apply to the state bureau for work. This fact is due to ignorance and to a misunderstanding of the Bureau on the part of the workers. They think the state of-

fices exist only for the lowest classes of labor. They do not know that skilled, technical, and professional vacancies are listed and filled through these agencies. These most desirable classes of labor need enlightenment and information upon this subject.

Likewise, many employers lack respect for or confidence in the state employment offices. This fact is due to ignorance or to unfortunate experiences at some time or other with the offices. They do not know that these offices will try to fill their orders for labor. Or, because some orders were not filled satisfactorily, the whole system is condemned.

On account of the war and the post-war conditions, unusual and unavoidable, it has been most difficult for the state bureaus of employment to fill at all satisfactorily orders for certain classes of work. They simply cannot be filled.

But the Pennsylvania Bureau of Employment is learning something every day and is striving continually to improve its service to employers and employe and deserves and seeks full confidence and respect from both parties. Here, especially are your counsel and cooperation sought.

With your cooperation and assistance the Bureau of Employment hopes to gather and disseminate wisely the latest and most accurate information in regard to the supply of and the demand for labor. The Bureau would like to secure regularly from you a statement of the number of workers needed or of the number of workers to be released on or about a certain date. This accurate and timely information will be invaluable to the Bureau in filling orders or in notifying employers where there is a shortage of labor or where there will be on or about a certain date a probable surplus of workers available for new employment. Such information, timely and accurate, in regard to the supply and demand of labor, in regard to the shortage or surplus age of labor, wisely disseminated, will be invaluable to the Bureau, to the employer, and to the employe. With your aid and cooperation, I believe that this system of labor information throughout the state can be operated.

There is another matter which now affects most vitally the distribution of labor in Pennsylvania. This is the shortage, most acute everywhere, of houses. It is merely impossible for the Pennsylvania Bureau of Employment to send labor to any place where the housing facilities are inadequate, non-existent, or impossible for unsanitary reasons.

It is important that the firms or corporations, which you represent, either alone or in cooperation with your local organizations, inaugurate extensive housing plans for your workmen. Otherwise, it is useless even to try to furnish you labor. The greatest need now in the Pennsylvania labor market is suitable houses for labor after it is placed.

I need hardly say that by statute the Pennsylvania Bureau of Employment is specifically forbidden to "assist in any manner whatsoever, any person, firm, association, or corporation who is a party to an industrial dispute, strike or lockout."

In closing, I must add that the Pennsylvania Bureau of Employment has devoted its best and most serious attention to the placement of Service men in their old jobs or in jobs equally good or better. Everything possible has been done to meet their needs and conditions. The local offices are now cooperating closely with the American Legion, which is looking carefully after the employment interests of the Service men.

Now, I hope that you all will feel free to ask many questions and to give suggestions and advice generously as to how the Bureau of Employment may more quickly and adequately serve your needs. No formal program has been planned. It is hoped that this conference will develop into a lively round-table discussion, in which everyone will take part. If it should eventually grow into a permanent organization for mutual cooperation among the members and with the Pennsylvania Bureau of Employment, I believe that great good will result for all parties concerned.

But now let us all get down to, and stick to, "brass tacks."

By referring to the table showing the placements made by the officers of the Employment Service it will be seen that, during the last nine months of the year, 1919, we were instrumental in securing positions for 173,159 people. Assuming that the average daily wage during the period was five dollars, which is certainly not a high estimate considering the wage scale of the period, we have a total of $865,795 per day in potential wages earned by people placed in positions through our instrumentality.

Another view of the same matter is presented thus. Suppose that on the average each person received work a day earlier than he would have received it had he not been able to draw on the facilities presented by the Employment Service. It will readily be seen that wages aggregating the amount stated above were saved to workers largely by reason of the existence of this service.

Our calculations are based on one day's loss or gain in wages. This is a conservative estimate as our experience has shown that by reason of giving our information concerning employment we are frequently able to save many days of delay and many miles of travel as well as much expense.

It requires more than a casual observation to show what a vast army 173,159 workers make and the significance of $865,795 per day gained or lost in wages. Nor will a superficial examination disclose the effect of this sum of money earned and expended by workers throughout the state upon the many lines of commercial and industrial activities.

At the present time there are many more openings in the state than there are unemployed workers; yet, people are availing themselves of our services in large measure to the end that they may quickly be placed in positions which they are seeking and employers are cooperating to a greater degree than ever before.

During the month of January, 1920, 20,216 persons were placed by the several offices of the Pennsylvania Bureau of Employment. Nine hundred, twenty-eight were women, of whom 702 were assigned to domestic or personal service, and 226 were employed as clerks, saleswomen, factory workers, etc.

Three thousand seven hundred, twenty-one Service men were placed into 2,125 common labor jobs and into 1,596 semi-skilled and skilled positions.

Fifteen thousand five hundred, sixty-seven civilian men secured positions, of whom 8,995 were common laborers and 6,572, skilled and semi-skilled.

These placements represent a cash value in potential wages of slightly more than $100,000 a day and of more than $2,000,000 a working month.

These figures, though only a hasty and rough estimate, understate the wage values in every case. They suggest, therefore, very strongly, the social, commercial, and industrial value to the employe, to the employer, and to the Commonwealth of Pennsylvania, of the State Bureau of Employment.

STATE EMPLOYMENT BUREAU.

Summary of Operation for Year 1919.

Month	Applicants	Vacancies	Referred	Placed
January, ...	Under supervision of U. S. Government.			
February, ...				
March, ...				
April, ...	21,505	20,602	10,566	10,113
May, ...	28,881	32,088	15,766	15,134
June, ...	29,688	42,977	23,550	21,999
July, ...	29,822	38,529	25,183	23,893
August, ...	35,246	64,632	32,106	28,381
September, ...	24,246	60,806	21,190	19,361
October, ...	31,059	56,919	26,049	24,476
November, ...	20,526	35,530	17,406	15,681
December, ...	18,075	29,761	15,108	14,121
Total, ...	239,048	381,814	186,924	173,159

72.4% of the persons applying for positions received work.
42.7% of the persons asked for by employers were furnished.
7.3% of the persons sent to positions failed to receive work.
18.1% of the applicants were holding positions when they asked for work.
8.3% were not capable of filling positions for which they applied.
1.2% were applicants for executive or technical positions for whom openings could not be found.

PERCENTAGE OF PLACEMENTS BY TRADES.

Agriculture, ...	1
Building and construction, ...	10
Clerical, professional and technical, ...	4
Clothing and textile, ...	2
Domestic and personal service, ...	2
Food and tobacco, ...	1
Lumber, ...	1
Metal and machinery, ...	40
Mine and quarry, ...	8
Paper and printing, ...	1
Transportation and public utilities, ...	10
Common labor, ...	20

THE BUREAU OF REHABILITATION.

MR. S. S. RIDDLE.

The Bureau of Rehabilitation, as you probably know, was established by an act of the last legislature. This bureau was established in the Department of Labor and Industry to aid men or women disabled in industrial work to be properly placed in jobs for which they are suitable. The act defines the work to be limited to a physically handicapped person. The term "physically handicapped person" means "any resident or residents of the Commonwealth of Pennsylvania whose capacity to earn a living is in any way destroyed or impaired through industrial accident occurring in the Commonwealth." That definition specifies that the man or woman to be aided by the bureau must first be a resident, and incapacitated to earn a living; whose earning power must be destroyed or impaired, and that earning power must have been impaired by an industrial accident. Now there are several little difficulties in that definition. What is an industrial accident, and what is a resident? Those questions are being cleared up, from time to time, as individual cases arise, by opinions from the Attorney General. Further, the act provides that the duty of the bureau, in rehabilitating disabled persons is not to be construed as applying to aged or helpless persons requiring permanent custodial care; or blind or deaf persons in care of any state or semi-state institution, or epileptics, or feeble-minded persons; but its duty is confined wholly to persons who are suitable subjects for rehabilitation. The whole theory is that if a man is injured in an industrial accident, as to be unable to follow his former work, it may be that some training along some other line will enable him to earn a living and fill a proper place in our industrial processes.

There is an appropriation to the bureau of one hundred thousand dollars. That appropriation is to carry out the administrative work of the bureau and, also, from this appropriation, direct payments may be made, in two ways, for the benefit of physically handicapped persons. Perhaps a reading of the act in that connection will give it to you more definitely. "The Bureau may procure and furnish at cost to physically handicapped persons, who have registered with the bureau, limbs and other orthopedic and prosthetic appliances, to be paid for in easy installments when such appliances cannot otherwise be provided; provided, however, that if it be shown that any physically handicapped person is unable to pay for such artificial limbs or other appliances the chief of the bureau may direct, with the approval of the Commissioner, that such limbs or appliances

shall be supplied to such physically handicapped persons and the cost thereof paid out of the fund appropriated for the rehabilitation activities of the bureau." Direct payments may therefore be made for the purchase of legs and arms for physically handicapped persons, when it is shown positively that they cannot afford to pay for them. Of course each case must be determined on its own merits. We have a case in the southern part of the state where a man lost his leg. The case was brought to a referee in the Bureau of Workmen's Compensation, and the referee brought it to the Bureau of Rehabilitation. The man had been living in more or less squalor, and seemed to be in a very bad way. We went down to see him and found that it was impossible for him to get work without a leg, and it was impossible for him to get a leg. Finally we canvased the town and we got a promise of employment for the man after he was able to work. There had been an infection in the leg, but the accident victim had recovered to such an extent that, if he could be started, he could probably make a good living, a fair living. We got him employment, and we got him a leg, and we are paying two-thirds of the cost of that leg. The leg will cost one hundred and fifty dollars, and the bureau will pay two-thirds of the cost of that leg, and his future employer is going his security for the balance at ten dollars a month, in five monthly installments. Of course the bureau could have paid the entire amount, but it is a question whether the man would have appreciated the leg nearly as much as he does when paying a portion of it himself. He has no dependents, and it is working no hardship on him to pay the ten dollars a month over a period of five months from his earnings.

The work of the bureau is arranged so that prospective applicants for the facilities of the bureau are located in a number of different ways. For instance, every industrial accident that occurs in the state, is reported to the Workmen's Compensation Bureau. These reports disclose the character and the type of injury received, and show whether the worker will likely ever be able to return to his former occupation. A copy of each accident report of a permanent disability is sent to the office of the Bureau of Rehabilitation from the Bureau of Workmen's Compensation. When these reports are received by the Bureau of Rehabilitation, showing that a worker has been severely injured, the Bureau sends to such victim a registration blank, with a copy of the law. An accompanying letter explains to the injured worker why the registration blank has been sent to him. The blank is filled out and returned to the bureau in most cases; we have been in contact with over one hundred disabled persons, and of that number probably eighty per cent. have filled out and returned these blanks. There are enough questions on the registration form to show whether the registrant is eligible to the benefits under the act. When a registration blank is received, the case is turned over,

or rather referred to an adjuster of the bureau. The adjusters are Mr. Clark in the central office, Harrisburg; Mr. Headley in Pittsburgh; Mr. Norris in Philadelphia, and Mr. Shortz in Wilkes-Barre. The adjusters go into all the details of the case concerning the man, to ascertain all facts. For instance, there was a boy near Easton who lost an arm at the shoulder socket. He was about sixteen years old, a bright youngster. We went over there on that case and put that boy in school. We put him first in a public school, next year he goes to the high school to take a commercial course. If he is successful at the end of his two or four years in high school, we can maintain him in a business college to complete his education. He will then have a ground work for stenography and bookkeeping which he desires to take up.

Work of this Bureau will largely have to do with the employment manager; that is, the work of rehabilitation placement in a plant will be through the men who are in charge of the employment of the employes for a plant. It is a known fact that, if a handicapped man can be placed in a job which he can perform satisfactorily, the handicapped man, in spite of his disability, in many cases, will relieve an able-bodied man to do work that the handicapped man can not do. For instance, there is a young fellow registered with the bureau who has lost a leg; it is being made possible for him to take a commercial course in a high school, and he is being made eligible and fairly competent to carry on clerical work with a corporation. The placing of that boy as a clerk will relieve an able-bodied man for other work. Of course, I do not say that a competent man should be discharged in order to make room for a man of this kind. But, as a general proposition, if as much ingenuity is used in adapting for a task and actually placing in employment a disabled man, or the part that is left of him, as is used in adapting the sound parts of a broken machine in the operation of a plant, a long step will be made in solving the problem. Whenever a valuable machine is broken so that it can no longer perform the services for which it was designed and built the sound parts of that machine that can be used in other service in the operation of a plant, are carefully and ingeniously put back into the mechanical equipment of that plant. The same procedure should be followed by the employment service, in regard to handicapped persons. Every case is an individual case; there can be no fixed set of rules covering all such cases. I think that all you employment managers will ultimately be in contact with the bureau in regard to this work, and your complete cooperation is most earnestly asked. This is not a charitable proposition; it is economic as well as humanitarian. If you can use these so-called "waste products" advantageously, it will be not only for their benefit but also for the benefit of the plant employing them in properly selected tasks.

HOUSING CONDITIONS IN PENNSYLVANIA.

MR. RITCHIE LAWRIE.

MR. ROBERT HAIGHT. Unfortunately, Mr. Ritchie Lawrie, the housing director of the Pennsylvania State Chamber of Commerce, had a previous engagement today. However, he prepared a paper which he has asked me to read on the subject of housing in Pennsylvania.

It gives me much pleasure to have this opportunity to outline briefly the work of the Housing Bureau of the Pennsylvania State Chamber of Commerce.

Early last fall the directors of the State Chamber reviewing the housing situation and realizing the urgency and seriousness of the question throughout our entire State, authorized the establishment of a Housing Bureau.

The Bureau continually surveys and studies all phases of the housing problem in order that it may assist industries and communities confronted by a housing shortage by making available helpful information through the medium of printed pamphlets, by correspondence, by conferences, by talks at general meetings and otherwise. In short, the Bureau acts in an advisory capacity as a clearing house of approved methods for meeting all phases of the problem. It does not actively participate in the financing and constructing of homes.

Pamphlets treating on the financing, organizing and operating of housing companies, have been given wide distribution throughout the Commonwealth, some 3,500 copies of each having been distributed. Additional copies are available for those interested.

A set of eighty prints showing 'floor plans, elevations and perspectives of practical homes,' has been prepared. All types of desirable modern dwellings are illustrated and a number of general suggestions given. Much study has been devoted to the exterior design and interior plan in order to insure practical, attractive, comfortable homes.

In view of the expense involved, the supply of plan sets has been limited, necessitating lending the prints subject to recall in order that this service may be furnished to all those desiring such assistance.

Much assistance has been rendered by correspondence. The Bureau has communicated with all Pennsylvania communities confronted with a housing shortage and has outlined specific suggestions of procedure. In many cases particular phases of the subject have been given special attention, information compiled, and reports made.

The director has made many trips to communities to confer with company officials, housing committees, and to address general meetings, relative to a particular housing problem.

Briefly, gentlemen—this is the housing service which the State Chamber is giving without charge not only to members but to non-members as well.

Possibly you are wondering just why the work of this Bureau should be outlined at this—an employment conference.

Because, gentlemen—housing bears a fundamental relation to commerce and to industry—to employment.

Organize if you will the most elaborate, most detailed, most efficient employment service and it will avail you naught if your communities are unable to house properly their workers.

There are housing conditions in some communities so inadequate that to maintain an adequate labor supply in such communities is like trying to fill a sieve with pump water.

Pennsylvania communities must be made fully to realize the importance of good housing—the direct relation good housing bears to labor turnover, labor efficiency, labor contentment, labor stability, and employment of labor.

The State Chamber operates for all of Pennsylvania. The State Chamber through its Housing Bureau is prepared to assist you in solving your housing problem. If you have a housing problem write to the State Chamber of Commerce.

I do not know that there is anything that I can say to supplement that, gentlemen. I think the remarks contained in that paper as prepared by the Housing Bureau, who are thoroughly conversant with the situation, as I think you are in your particular localities, cover the subject.

HOUSING CONDITIONS AND LABOR TURNOVER.

MR. PAUL KREUZPOINTER.

From my experience during the last thirty-five years in mills and factories, in Pennsylvania, I found that the housing proposition is one of the most vital and difficult causes that contribute to the labor turnover. I remember finding in one city that twenty men had moved away from that city in one week because of bad housing conditions. In another city, a very much larger city, I found also that the housing conditions were so bad as to be abnominable. The mill people, the proprietors, were aware of it, the Chamber of Commerce was aware of it, but the physical conditions were very difficult to overcome. At the same time, it was admitted by the proprietors of the mill that the housing conditions caused at least fifty per cent. of the labor turnover. In another case I found that in the technical high school the principal complained of losing some of his best scholars and pupils on account of the bad housing conditions, under which the parents were obliged to live. From all points of view, aside from the other complications which contribute to labor turnover, the housing conditions are the most vital, and ought to receive earnest attention, not only from the proprietors but from the cities and from the Department of Labor.

The primary function of an employment bureau, Federal or State, is the rational and economic distribution of labor temporarily out of work.

Auxilliary functions, growing out of the primary function of a labor bureau as its service becomes perfected, are:

(a) Classification of the applicants into skilled, semi-skilled and unskilled.

(b) Classification into groups of occupations, industrial or commercial, male or female.

(c) Classification of vocational ability of individual workers in a given occupational group.

(d) Deducting suggestions from the results of the foregoing information concerning possible improvement, vocational or social, of employes.

(e) Diffusing widely the results of the accumulated experience of the State Labor Employment Bureau as to cost to our industries of the floating labor elements and consequent increase of cost of production.

Briefly stated, an effective employment bureau should not only serve the immediate purpose of a labor exchange for the accommodation of both the employer and employe, but, in addition, should be an instrumentality in the larger, broader, social service of contributing its share to the social and vocational progress of labor for the purpose of modifying the causes of the expensive labor turnover with which an employment bureau is constantly dealing and which is a social and moral detriment and an enormous economic loss to the country.

If the average labor turnover in a large textile mill is 250 per cent. and if the cost of breaking in a new employe is forty dollars, then the cost of production is increased to that extent with liability of decrease in consumption, due to the high cost of production. A Cleveland factory engaged seven hundred and fifty girls and was able to keep but one hundred and seventy-five of them. In a large plant in the middle West out of a total force of six thousand two hundred and ninety-four employes, one thousand four hundred and forty-four were hired during one month and one thousand six hundred and sixty-six left during the same month. A labor turnover of from two hundred to four hundred per cent. is not unusual. The President's Mediation Commission found a labor turnover of six hundred and sixty per cent. at the Northwestern lumber camps. According to the census of 1910, Pennsylvania had an average of eight hundred and seventy-seven thousand five hundred and forty-three wage earners employed in manufactories. If the average turnover was one hundred per cent. and in some of the large industries with a large per cent. of semi-skilled or unskilled labor it is commonly from two hundred to three hundred per cent., and if the cost of breaking in of an employe was only ten dollars, then the cost of production during the census year would have been increased ten per cent. The census gives the value of products for the census year as $2,626,-742,000.00 of which the manufacturing cost was $1,044,182.00. Ten per cent. of this sum, credited to labor turnover, is an extra and largely avoidable cost to production. Would it have paid Pennsylvania to have, during the census year, a well-equipped, liberally provided for employment bureau ready to function in the manner prescribed above in order to save the larger part of those uselessly spent one hundred and four millions of dollars.

Who is ready and willing to say that the sources and causes of this enormous extra cost of production have decreased to any extent during the past ten years?

The sources contributing to abnormal labor turnover are of extremely complex nature, having their origin in an ever varying combination of economic conditions, social habits, inherited customs, uncongenial environment, bad housing, ineffective vocational training or no training, abuse of managerial power, injudicious treatment, dis-

regard of human sentiment and self-respect, favoritism, national or religious prejudice, undeveloped reasoning power of the employes, total neglect of training of the great mass of industrial workers in even primary understanding of business principles, and the changing effects of social-economic and ethical forces in shaping the industrial and commercial activities and transportation facilities of the country. Avoidable labor turnover is a dislocation of untrained and imperfectly controlled social forces, indicating an absence of co-operative spirit between employer and employe. It is an indictment of our neglect to develop the wealth of mental resources lying dormant in the people and to cultivate social responsibility. Thus, to deal with the effects of this dislocation of social and industrial forces and to guide it temporarily into useful channels in a systematic and business-like manner is the primary function of the employment bureau.

And because of the extensive field covered by our industries in the state, and because small industries suffer from the effects of labor turnover just as much as large industries, employment bureaus ought to be scattered liberally all over the state. The more widely an effective system of labor exchanges is distributed, the greater will be the saving of millions of dollars in time and wages in the interest of labor and of industry. As a corollary and naturally progressive step growing out of the activities of these employment bureans, the records accumulating at these labor exchanges should serve as material for the state, for the public educational institutions of every kind, and for other social organizations, to study in order to modify, if not to remove, the causes making employment bureaus necessary as a social institution. Modern industrialism has created new problems and a solution of these problems must be found for the benefit of the State of Pennsylvania.

COMMITTEE ON RESOLUTIONS.

Mr. E. F. Harris, Chairman.
Mr. C. S. Seamans,
Mr. I. U. Kershner,
Mr. Paul Gendell,
Mr. E. J. Poole,
Mr. William J. Tracy.

PERMANENT ORGANIZATION

Mr. HARRIS. A recommendation has been made that before we read the resolution, we take up the question of forming some sort of permanent organization; in other words, that we set the Committees to work so that the men who desire to leave early this afternoon will be enabled to get their trains. In that connection, the committee desires to offer the following recommendations: Your committee finds a need for a state-wide organization composed of employment managers, and, therefore, recommends that this gathering hereby create a state organization, the name of which is to be selected by the nominating committee. We recommend a nominating committee of five, to be appointed by the Commissioner, whose duty it shall be to designate the offices necessary, and to submit to this meeting the nominees for all offices which they recommend. We recommend that the permanent officers be appointed a Committee to draft a constitution and by-laws, to be submitted to the next general convention. We also recommend that a convention be held each year in whatever city the convention may desire, and in whatever month found most convenient.

The idea of the committee was that this permanent organization would be formed with a view of meeting at Harrisburg or Pittsburgh or Scranton or wherever it was deemed advisable to discuss the very things we are talking about this day and to confer with the Commissioner in getting enacted certain laws, if need be, or other regulations which we may want put into effect at any time.

The resolution was regularly seconded and adopted.

COMMITTEE ON NOMINATIONS.

Mr. Harris.
Mr. R. L. Wilson.
Mr. W. Ross.
Mr. Charles P. Miley.
Mr. Thomas E. Conway.

REPORT OF NOMINATING COMMITTEE.

Mr. HARRISON. The nominating committee, Mr. Commissioner, has appointed the following men to be the committee of five: Mr. Paul Gendell, of Philadelphia; Mr. E. F. Harris, of Pittsburgh; Mr. C. P. Miley, of Reading; Mr. C. E. Conway, of Easton; and Mr. J. F. Reeves of Erie. It might be well out of courtesy to that committee to leave the selection of the committee on by-laws and of the committee of offices to them, and also the selection of the time of the meeting and the place of the meeting. Inasmuch as they are the permanent committee, it will be far better for them to do that than for the nominating committee and also to propose the name of the organization; but the suggestion is made that if the organization is permanently formed, that it will be affiliated with our National Association of Employment Managers, and that the time selected for the meeting be some time in the Spring, so that it will not conflict with the meeting of the National Association of Employment Managers, which is usually held in May. We might suggest as a name, the Pennsylvania Employment Managers' Association.

REPORT OF COMMITTEE ON RESOLUTIONS.

Mr. HARRIS. Mr. Commissioner and gentleman, in view of the fact that this resolution has to do with Act 373, Section 13, I wonder if it would not be advisable for me to read that section of the Act to the people here for their information.

COMMISSIONER CONNELLEY. Yes, it might be well.

Mr. HARRIS. Section 13, Act 373, reads as follows:

Section 13. Each district and local office shall have a representative council, appointed by the commissioner. The council shall consist of six members, one of whom shall be a woman, and all of whom are citizens of the United States and of the State, and residents of the district where the council is to serve. One member shall be an employer, not a member of any employers' association; two members shall be representatives of employers' organizations; one member shall be a working person, not a member of any organization of working people, and two shall be representatives of organizations of working people. The commissioner shall designate one from the employers and one from the employes, to serve for a period of two years; one from each group, to serve for a period of four years; and one from each group, to serve for a period of six years. Upon the expiration of said terms, the term of office of each member thereafter appointed shall be for a term of six years, except that any member appointed to fill a vacancy shall serve for the unexpired term thereof.

The commissioner and the director shall be ex-officio members of each council. The superintendent in charge of a district shall be chairman of the council for his district, and in case of his inability to be present at any meeting the director or the commissioner may act as chairman.

The actual and necessary traveling expenses incurred by members of district representative councils, while engaged in the performance of their duties, shall be paid by the State.

Also Section 14.

Section 14. The council in each district shall,—

(a) Devise methods and take steps toward the regularization of employment in the various industries and seasonal trades of the district.

(b) Devise plans and take steps to promote public improvements by municipalities within the district, during seasons of unemployment.

(c) Co-operate with any person, employer, association, or organ of the press in accomplishing the aforesaid purposes.

(d) Appoint sub-committees to deal specially with any subject which the council has power to investigate or act upon, but each sub-committee shall be presided over by a member of the council.

(e) Hold meetings at least once each month, or oftener if required, for the accomplishment of the aforesaid purposes; such meetings to be called by the chairman of the council, or to be fixed at any regular meeting of the council.

(f) Keep minutes of all meetings; submit a copy of all minutes, records and decisions; and report in full on all actions or proceedings to the director. No rule shall be prescribed or action taken by the council inconsistent with the action of the board.

That in substance is the statute law. After a general discussion the following resolution was drafted by your committee:

Whereas, That after a general discussion it is the consensus of opinion of your committee that Act No. 373 of the session of 1915, creating the Bureau of Employment if enforced will properly take care of all the adverse criticism brought out at this morning's session, except the determining of when an industrial dispute becomes a strike or lockout (and when it ceases to be such)

And Whereas, The Industrial Board is authorized by existing law to devise plans and take steps toward the regularization of employment in the industries of the state;

And Whereas, Section 13 of the said act provides a representative council to be attached to each district or local office, we feel it is possible to overcome the only objection raised to the present law by a ruling of the Industrial Board;

Therefore, Be it Resolved, That the Industrial Board be petitioned to enact rulings that will provide as follows:

1. That the employment bureau upon receiving advices of an industrial dispute, strike, lockout, etc., shall immediately refer the matter to the Bureau of Mediation, which shall officially investigate the industrial dispute, strike, lockout, etc., which report shall be submitted to the representative council provided for in Section 13 of Act No. 373, and the representative council (shall consider such report and such other information as may be brought to its attention and) shall then determine whether an industrial dispute, strike, lockout, etc., exists.

2. If either of the parties to the industrial dispute, strike, lockout, etc., or the public, does not approve of the decision of the representative council, an appeal may be taken to the Industrial Board, whose decision (as to whether a strike exists or has ceased) shall be final and binding.

NOTE: Clauses in parentheses were amendments adopted.

RESOLUTIONS FROM THE EMPLOYMENT MANAGERS' COMMITTEE DELAWARE RIVER SECTION, ATLANTIC COURT SHIPBUILDERS' ASSOCIATION.

MR. GENDELL. Mr. Commissioner: I want to introduce another resolution. I might say this, that many people are not quite aware of the extent of the shipbuilding industry of Philadelphia and of Pennsylvania. We employ now in the Delaware district about seventy-five thousand men, and most of them are Pennsylvania citizens, a few of them are citizens of New Jersey, and a few of them are citizens of Delaware. That great force of men has been increased from a few thousand to that number within the past three years. The employment problem is the most serious of any industry that entered into the winning of the war. Naturally the employment managers of the shipyards are vitally interested in the success and the proper support of the State Employment system. We met on Saturday and discussed this question very thoroughly. Some of us are quite familiar with the operation of the State Bureau. The speaker himself was an employe of the State Bureau at one time in the Philadelphia office. Others of us have had dealings with it, some with greater success than others. We do not feel very enthusiastic over the results obtained during the administration of the United States Department of Labor. We did feel, however, that a proper State Employment Bureau was a necessity; so we drew up these points that bear largely on the service which they can render to us, and with your permission, I will read this proposition that it may be passed as a resolution of this body.

1. That the State Employment Service engage competent interviewers who will refer applicants for employment on an impartial basis to industrial plants or representatives of such plants in accordance with requisitions for help filed by the various companies.

2. That the State Employment Service provide reasonable facilities for office space for representatives of industrial plants when such is desired at the offices established by the service.

3. That priority be given by each office to the needs of the particular local industrial district in which the office is located, the territory of which district may not necessarily be confined to the state limits but may overlap into one or more adjacent states.

4. That the appropriation for the State Employment Service include a substantial sum for publicity purposes to acquaint workers with the advantages of the service.

5. That necessary records and information be provided for the use of employers and employes as to the labor supply and requirements in Pennsylvania and adjointing states.

Now each one of those paragraphs brings out a real criticism of the weakness of the service as at present constituted. We believe that each one of them is of vital importance, and we would like to see them discussed and if possible adopted.

As a matter of record I would also like to offer the following resolution that was unanimously adopted at our meeting on Saturday.

Resolved, That the Employment Managers' Committee of the Delaware River Section of the Atlantic Coast Shipbuilders' Association go on record as expressing its appreciation of the sincere and earnest cooperation extended by Mr. Jacob Lightner as Director of the Pennsylvania State Employment Bureau during the trying period of the war when it was necessary greatly to increase the working forces of the shipyards. Mr. Lightner's efforts proved a substantial help in carrying out the Nation's shipbuilding program and are largely responsibe for the feeling on the part of the employment managers of the shipbuilding industry that a public employment system is both an aid and a necessity to industry and should be conducted by the State authorities rather than by the United States government.

A REPRESENTATIVE. I move you, that this resolution be submitted to the Commissioner for his consideration.

The motion was seconded and unanimously adopted.

REPORT OF COMMITTEE OF FIVE—PERMANENT ORGANIZATION.

MR. HARRIS. Gentlemen, I have had the honor of being appointed the Chairman of this Committee of Five. We have a report to make which is very brief. There was some discussion previous to going into session to the effect that we should formulate a form of Employment Managers' Association, or something of that sort. It seemed to be the consensus of opinion among ourselves that we possibly did not want that at this time but that possibly all we did want was an Advisory Committee that could be called together at the discretion of the Commissioner, to discuss problems such as came up today; and, if at a later date, or after the first meeting, it develops that we feel that there is a need for a state-wide employment managers' association that we could organize that a little later. These are about all the recommendations that we have to make now. We are at the disposal of the Commissioner, and there is very little use of going into any detail. The Department of Labor and Industry is familiar with the details of this work and we are going to work under that Department. The name suggested, temporarily, or until possibly the next month or so, was the "Employment Advisory Group of the Pennsylvania Department of Labor and Industry."

COMMISSIONER CONNELLEY. You have heard the report, what is your pleasure?

It was regularly moved and seconded that the report be accepted.

The Pennsylvania industries represented and the gentlemen appearing in their behalf were as follows:

American Steel & Wire Co.,
Rohe C. Free, A. E. S., 15th & Penna. Ave.,
Pittsburgh, Penna.

Atlas Portland Cement Co.,
Preston J. Everett, Employment Mgr., 713 N. 9th St.,
Allentown, Penna.

Atlantic Coast Shipbuilders Association, ——————
Paul Gendell, Camden, N. J.

Atlantic Refining Co.,
Horace G. Hill, Jr., Employment Mgr., 3509 Baring St.,
Philadelphia, Penna.

Barrett Co.,
Roy M. Godwin, Safety Engineer, 3150 Keyser St.,
Germantown, Penna.

Barret Co.,
Anthony F. Dillon, 5729 Catherine St.,
Philadelphia, Penna.
Bell Telephone Co.,
H. W. Dean, Asst. Traffic Employment Mgr.,
6225 Wissahickon Ave., Germantown, Penna.
Bell Telephone Co.,
C. F. Lincoln, Executive Asst., 2704 Harrison St.,
Wilmington, Del.
Bethlehem Steel Co., Steelton, Penna.,
Harry W. Zook, Supt., Employment & Real Estate,
Camp Hill, Penna.
Bethlehem Steel Co., Bethlehem, Penna.,
George W. Vary, Supt., Employment & Welfare,
607 W. Market St., Bethlehem, Penna.
Brill, J. G. Co., Philadelphia, Penna.,
George O. Swartz, Wenonah, N. J.
Cambria Steel Co., Johnstown, Penna.,
R. S. McGraw, 636 Horner St., Johnstown, Penna.
Carpenter Steel Co., Reading, Penna.,
Charles T. Miley, Reading, Penna.
Carpenter Steel Co., Reading, Penna.,
Ernest J. Poole, 200 N. 5th St., Reading, Penna.
Chamber of Commerce, Altoona, Penna.,
W. A. Hoyt, Hutchinson Building, Altoona, Penna.,
Chamber of Commerce, Altoona, Penna.,
Paul Kreuzpointer, 400 Third Ave., Altoona, Penna.
Curtis Publishing Co., Philadelphia, Penna.,
Earl B. Morgan, Director of Personnel,
1004 Marlyn Rd., Overbrook, Penna.
Dravo Contracting Co., Pittsburgh, Penna.,
J. F. Hattman, 922 School St., Coraopolis, Penna.
Employers Association of Pittsburgh, Pittsburgh, Penna.,
Wm. Frew Long, 128 Griffin Ave., Pittsburgh, Penna.
Franklin Sugar Refining Co., Philadelphia, Penna.,
Arthur W. Lutz, Employment Mgr.,
317 W. York Street, Philadelphia, Penna.
General Electric Co., Erie, Penna.,
J. F. Reeves, R. F. D. No. 8, Erie, Penna.
Hamilton Watch Co., Lancaster, Penna.,
E. J. Guilford, 1263 Wheatland Ave., Lancaster, Penna.
Hammermill Paper Co., Erie, Penna.,
M. Harrison, Director Industrial Relations,
1438 East Lake Road, Erie, Penna.
Hays Mfg. Co., Erie, Penna.,
M. A. Carlisle, Employment Mgr.,
1825 Ottawa Drive, Erie, Penna.
Hazel Atlas Glass Co., Washington, Penna.,
R. L. Huff, Industrial Engineer,
Washington, Penna.
Hazel Atlas Glass Co., Washington, Penna.,
Thomas F. Peekett, Supt.,
71 W. Prospect Ave., Washington, Penna.

Ingersoll Rand Co., Easton, Penna.
Thomas E. Conway, Employment Mgr., Easton, Penna.
Jones & Laughlin Steel Co., Pittsburgh, Penna.,
M. T. Mossman, 316 Oliver Building, Pittsburgh, Penna.
Kaufman-Baer Co., Pittsburgh, Penna.,
Robert P. Wilcox, General Mgr.,
6662 Woodwell, Pittsburgh, Penna.
Loomis & King Co., Altoona, Penna.,
O. C. Loomis, Altoona, Penna.
Lorain Steel Co., Johnstown, Penna.,
D. C. Thomas, Mgr., Employment & Accident Dept.,
545 Central Ave., Johnstown, Penna.
McClintic, Marshall Co., Pittsburgh, Penna.,
H. B. Furlong, 553 Mifflin St., Wilkinsburg, Penna.
Merchant Shipbuilding Corporation, Harriman, Penna.,
W. J. Field, Asst. Mgr., Division of Industrial Rel.,
Harriman, Penna.
Mesta Machine Co., Homestead, Penna.,
Elmer F. Harris, Supt., Employment & Welfare,
Oakland Sta., Pittsburgh, Penna.
National Tube Co., Pittsburgh, Penna.,
W. M. Hogg, 447 Union Arcade, Pittsburgh, Penna.
Penna. Central Light & Power Co., Altoona, Penna.,
J. E. Shute, Supt., Personnel,
1412 Eleventh Ave., Altoona, Penna.
Penna. Railroad, Pittsburgh, Penna.,
A. H. Dater, Personnel Agent,
310 Penna. Station, Pittsburgh, Penna.
Penna. Railroad, Philadelphia, Penna.,
James K. Linn, Employment Agent,
1625 Filbert St., Philadelphia, Penna.
Penna. Railroad, Philadelphia, Penna.,
I. U. Kershner, Service Agent,
Room 319, Broad St. Station, Philadelphia, Penna.
Penna. Railroad, Altoona, Penna.,
F. R. Stier, Maxwell Apts., Altoona, Penna.
Penna. Railroad, Lebanon, Penna.,
M. H. Wagner, Employment Agent,
142 N. Ninth St., Lebanon, Penna.
Penna. Seaboard Steel Corporation & Tacony Steel Corporation,
Philadelphia, Penna.
Walter F. Mulhall, 1417 Sansom St., Philadelphia, Penna.
Penna. State Chamber of Commerce, Harrisburg, Penna.,
H. M. Eroh, Telegraph Building, Harrisburg, Penna.
Penna. State Chamber of Commerce, Harrisburg, Penna.,
Robert Haight, Director Legislative Bureau,
Telegraph Building, Harrisburg, Penna.
Penna. State Chamber of Commerce, Harrisburg, Penna.,
Ritchie Lawrie, Jr., Telegraph Building, Harrisburg, Pa.
Philadelphia Electric Co., Philadelphia, Penna.,
B. Frank Day, 1000 Chestnut St., Philadelphia, Penna.
Philadelphia Roll & Machine Co., Philadelphia, Penna.,
R. T. MacNicholl, 5549 Bromall Ave., Philadelphia, Pa.

Pressed Steel Co., Pittsburgh, Penna.,
S. Frank McKer, Asst. to Vice President & Gen. Mgr.,
Pittsburgh, Penna.
Pusey & Jones Co., Wilmington, Del.,
H. S. Hurl, Employment Mgr.,
315 N. Rodney St., Wilmington, Del.
Scranton Bolt & Nut Co., Scranton, Penna.,
H. T. Yost, 935 Woodlawn St., Scranton, Penna.
Smith, S. Morgan, Co., York, Penna.,
James S. T. Strayer, Traffic & Employment Mgr.,
York, Penna.
Standard Refractories Co., Claysburg, Penna.,
Ashton Gardner, Claysburg, Penna.
Standard Sanitary Mfg. Co., Pittsburgh, Penna.,
William H. Garver, New Brighton, Penna.
Sun Shipbuilding Co., Chester, Penna.,
C. J. Drennen, Employment Mgr., Chester, Penna.
United Gas Improvement Co., Philadelphia, Penna.,
W. P. Baylie, 24 N. 22nd St., Philadelphia, Penna.
United Gas Improvement Co., Philadelphia, Penna.,
James B. Douglas, 1401 Arch St., Philadelphia, Penna.
United States Aluminum Co., New Kensington, Penna.,
N. V. B. Ziegler,
1118 Woodmont Ave., New Kensington, Penna.
Union Switch & Signal Co., Pittsburgh, Penna.,
H. N. Wood, Supt.,
7718 Bennett St., Pittsburgh, Penna.
Westinghouse Electric & Mfg. Co., Pittsburgh, Penna.,
John C. Bower, Supt., Employment Dept.,
Edgewood Park, Pittsburgh, Penna.
Westinghouse Electric & Mfg. Co., Philadelphia, Pa.
H. T. Madsen, 5642 Willows Ave., Philadelphia, Penna.
Westinghouse Electric & Mfg. Co., Pittsburgh, Pa.
Robert L. Wilson, Works Mgr.,
303 S. Fairmount St., Pittsburgh, Penna.
William Cramp & Sons, S. & E. B. Co., Philadelphia, Pa.
W. P. Ross, Employment Mgr.,
Richmond & Norris Sts., Philadelphia, Penna.
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Butterworth, Mary C., Harrisburg, Penna.
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Hartman, Fred J., Secretary Industrial Board.
Lawlor, Marion E., Pittsburgh, Penna.
Lewis, Howard Benton, Legal Bureau, Philadelphia, Penna.

Lightner, Jacob, Supt., State Employment Service, Harrisburg, Penna.
Paterson, F. D., Harrisburg, Penna.
Pennock, R. M., Actuary, Harrisburg, Penna.
Peters, Robert J., Consultant, Bureau of Employment, Harrisburg, Penna.
Riddle, S. S., Bureau of Rehabilitation, Harrisburg, Penna.
Sankey, William, Harrisburg, Penna.
Seamans, C. S., State Employment Bureau, Scranton, Penna.
Seidel, P., State Employment Bureau, Harrisburg, Pa.
Semple, Mrs. Samuel, Industrial Board, Titusville, Pa.
Teeter, L. L., State Employment Service, Harrisburg, Pa.

COMMONWEALTH OF PENNSYLVANIA

BULLETIN

OF THE

Department of Labor and Industry

CLIFFORD B. CONNELLEY
Commissioner

CONTAINING:

PROCEEDINGS OF ANNUAL PENNSYLVANIA SAFETY CONGRESS

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SUNDAY, MARCH 21.

AFTERNOON SESSION

CHAIRMAN,

Dr. Morris E. Swartz, Secretary, Federal Council of Churches.

THE RELATION OF INDUSTRY TO RELIGION

By Dr. Riley M. Little, Director,
Safety Institute of America, New York.

The Commonwealth of Pennsylvania through its efficient Department of Labor and Industry is doing a great thing in calling together outside experts in the field of safety in the following of safety for the industrial worker.

I could not help being impressed as I thought of this Congress and of the wonderful strides that have been made in the comparison of Jesus Christ to the life of the toiler and for this Commonwealth being called together to talk together about the safety of the toiler is certainly a great step forward.

Jesus Christ is the world's greatest religious teacher and authority and what He has to say upon the subject of life is of final interest to us all.

"I have come that you might have life and have it more abundantly." Its meaning therefore is, life for us and not death, health for us and not injury and sickness, knowledge for us and not ignorance, friendship for us in this world and not loneliness and righteousness and not sin. Because Jesus Christ considered all life as Normal, great and interest wide in its range of activity. He was the Great Life Giver. That was His purpose in the world. Furthermore, Jesus Christ knew the workday and was worthy of its time. He belonged to the artisan class and knew what it was to work hard and long hours in the carpenter shop of Nazareth. He was not a class teacher, but a sympathizer with all classes and He earned His bread by the sweat of His brow.

In opening this address this afternoon upon the "Relation of Industry to Religion," I would like to step forward into this discussion with the mind and suppose of the Master who came that we might have life and have it more abundantly in our in-

dustrial world as well as educational and social life. Therefore, it seems to me most opportune that Commissioner Connelley in opening "Safety Week" here in Harrisburg under the auspices of the Department of Industry and Labor should have this meeting here for us this afternoon and have the presentation of this subject of relationship of industry to religion. This State Department of Labor and Industry is a religious agency of the Kingdom of God as well as of the Government. Why? For many reasons. This great Department of the Government of the State is doing a constructive piece of work. Only a few years ago we had our factory inspection laws and we endeavored to minimize the hazards of industry. In mines, mills and factories the last consideration, almost, was the element of safety.

We are pleased to say that the Commissioner of the Department of Labor and Industry is thus forethoughtful and keeping in tune with the fundamental things. This is a wonderful week and is a safety conference to place emphasis upon the safety in industry of workers, and concerns the life and lives of the toiler during working hours. If they are not toilers, they are also mean of religious instinct. I hope that most of you are religious men. I think there is a great deal of religion of the day as well as for the world and that religion which does not have a good special amount of deed becomes hard and selfish. If there was more religious support and a thorough idea of life and the two were joined together we would be able to solve a great many of our industrial problems and that we certainly must follow as citizens and try and make mines and manufacturing centers help in safeguarding the places in which the workers are to spend eight or twelve hours a day.

Help the sick and preach the Gospel. It is an inactive power, but a creative and realizing power. I am sure he will be a safety man and he will save their bodies and save the minds of people, but we will never save their souls while we mutilate their bodies and minds. It is support, it is practical achievement and it is promises. I refer to the National Safety Movement which sprung up out of our industries, sprung up out of our iron and steel industries and out of these industries sprung up all the more safety movements which has now spread all over.

In 1912 this meeting of the Association of I. and S. men talked together about what they could do to prevent accidents. In the next year of nineteen thirteen, forty men met together in New York and organized a National Safety Council. There are more than four thousand companies and incorporated members of the National Safety Council of America. The movement is like a religious crusade to protect the life, and lives of millions of our workers. Many of our large industries are being supported by the largest manufacturers in the world and by governmental agents and by the Federal Government and I am pleased to hear that Harrisburg is able to give three or four days to this question and provide and discuss together the making of the industries of the State safe and protect the life and limb of the workers.

What is the size of the problem before us? The loss in industrial accidents in our country every year amounts to over millions of dollars and accidents estimated at least seven million every year. Industrial accidents every year result in a loss of time of four weeks or more for the workers on an average. At least fifteen thousand of them result in permanent partial disabilities. Many of the larger industries have made commendable progress in saving the lives of their employees. In seven years, the United States Steel Corporation saved the lives of twenty-three thousand workmen, besides saving over one million dollars in costs. The large well-organized industries are making the greatest progress. Thousands of lives of employees and of the public have been saved by the Safety

Campaign last October on all of the railroad systems of the country. The safety movement means more than to prevent accidents. It helps to create a better individual spirit. We will find that the safety problem is very much larger still because, we have in this country every year about nine hundred to ninety-five hundred actual deaths and at least forty-five million accidents which injure people and turn them aside from their usual vocation.

This period of our day, this period when all our industrial processes are keyed up, when our public is teeming with activity and power and when we are grinding people under our wheels. What was our loss during the war? Seven hundred thousand approximately. Firing line and battlefield deaths, fifty-thousand three hundred, all less than the actual deaths in this country and three hundred and twenty-seven thousand, five hundred casualties. There were approximately four million, five hundred thousand men called to the colors. We are followers of Jesus Christ and I have come so that you might have life and have it more abundantly.

A steel corporation, after they had been engaged for seven years in organized safety work, found they had saved about one million, five hundred thousand dollars and also saved the lives of over two thousand workers as compared with their experience before entering this safety work. They have accomplished marvelous results and a very handsome reduction in the number of casualties and injuries among the employees and also among the public by that safety campaign, but you will be further surprised when you begin to realize the outcome of the whole proposition.

A good organized safety work in any industry causes more production and it is just to the management and employees that they should help install it, the co-operation of everyone concerned, confidence and good will.

In nineteen hundred and sixteen a certain steel corporation had one hundred and seventeen lost-time accidents; in nineteen seventeen they had thirty-six, and in nineteen eighteen they had seventeen and up to the fifteeth of December, when they notified me afterwards they had none until that time up to January tenth. In nineteen nineteen, they only had seventeen lost-time accidents out of about one hundred and fifty men working in one wire mill which they considered a hazardous employment. Five of them were due to the carelessness of the workers and the others for various reasons.

These results can only be accomplished in two ways: First, the corporation itself should be thoroughly interested in the safety movement and should be willing to spend money to get the results and should employ good engineers to supervise and install good machinery and propose to do everything they can to make the plant safe in a physical way. One of the very first things industry must do to aid safety is to teach the men to be careful in their habits and avoid injuries and, therefore, it requires co-operation between the manager and the employee. About twenty-five per cent of the men in some plants cannot speak English, except pigeon English, therefore, there should be a good support of fellowship throughout the whole crowd.

They had every record up on the bulletin boards, showing their progress from year to year. They had their own band and their own smokers. With their own band they rendered and so they soon had the throbbing spirit of unity and harmony and co-operation all through the plant. From January first to March first, they did not have an accident.

Now I want to bring out as clear as possible, and yet not impose upon Dr. McDowell, the four most important ideas of the safety movement that are of the greatest importance to industry today. It brings the men together, it brings them together to think together, to plan together to function together and that is what

we need in our industries today. It brings about the spirit of harmony, and unless there is harmony between people that are working together, there cannot be the good will in the spirit of production. The creative spirit will not be realized unless there is harmony, harmony in industry as well as in music. Jesus was a lover of music and He was a great Harmonizer.

The third great point is that of co-operation. Working together is when we get good results. I go over the country a good deal and have visited a great many industrial plants. I have visited a score of them where the management was well interested in the safety movement and in some instances tried to get in personal touch with the workers. The percentage of efficiency increased and accidents were reduced considerably and you can bring the workers together and help them think together and become acquainted with each other and trust each other and can then have harmony together and the co-operation and strength of all concerned and there is not anything more needed in our industry today for production than this great unity, harmony, and co-operation.

More than about fifty per cent of the productive power of this country is in need of co-operation. The world is sinking back for the want of these three things. The whole world is shot through with distress today and needs the support of unity, of harmony and of co-operation. God will soon make life sweeter and better for us all and we will be able to realize more fully what all this means to us, and help us to remember the great words of Jesus Christ, "I have come so that you might have life and have it more abundantly."

DR. SWARTZ: I am sure that the speakers discovered that there is a sympathetic cord here this afternoon. May the Lord bless this message we have heard. We will next hear from a man whose name has been heard so extensively that he needs no introduction, Chancellor S. B. McCormick, of the University of Pittsburgh.

ADDRESS

By Dr. S. B. McCormick, Chancellor, University of Pittsburgh, Pittsburgh, Penn'a.

Two colored boys were passing each other one day after a fight they had been having, and one said to the other, "All them things you said I is, you is," and I want to just say that I do not want to repeat any part of Dr. Little's speech. It has been most effective and everything on the subject of safety that should be said has been said to us this afternoon, and in a way that I am sure will accomplish something for all of us for all time.

I was most interested last evening when reading a report of the Religious Educational Society of this country, and they referred to the brotherhood of man—the insistence to loyalty, intolerance of anything solely for personal gain, a lofty ideal in the future. Of all these I think we need these most now. The writer goes on, but it is certainly true at this time.

As Dr. Little says, it is a fact, the whole idea of this present thing with reference to labor is at its root a religious idea. It is the same old story, "Am I my brother's keeper?" to the present day that we are to take care one of the other, and it is as before said, essentially religious and when we come to the words of Jesus Christ, "Thou shalt love the Lord thy God and they neighbor as thyself." And you know those words which will solve all other problems, "Do unto others as you would have them do unto you, for this is the law and the prophet." And then those words of Paul, "Bear ye one another's burdens, and thus fulfill the law of Christ."

In discussing the subject of industry, it is not only right that we should introduce the idea of religion, but it does not seem possible to discuss industry at all unless we accept the idea of religion, for they are identical. "If any man will not work, then let him not eat" so that the very word is that if we analyze it.

I will not give you an extensive address, especially as you have gotten all that it is well for us to take away, but I want to say in the first place, in order that there may be this good will and harmony and protection, we must realize the far-reaching consequences of the violation of any of the fundamental principles. When we refuse for any reason to do the thing that is right and say the thing that or do the thing that pertains to the well-being of ourselves and others, it is not so great to the other person as it is to ourselves. Dr. Little said we are realizing fifty per cent, and he is calling attention to the fact that it affects our well-being in many lines, especially that we are doing harm to ourselves. When we do a worthy deed we are always happier for it and when we do otherwise the hurt is not the organization but to ourselves and no man can do wrong, no matter how altruistic, without hurting himself.

On the other hand, the man who puts in a half day for a whole day is hurting himself, and the man who pays for a half day instead of a whole day when the whole day's work is done, he hurts most of all himself. So that we see the very thought of religion enters into the fellowship of man to man as well as every part of our social life. I would say that in order that we get all things something like what we ought to, we must look after the honesty of all of the people concerned. It is not enough that the employer should pay for a day's work, that the man employed should give a full day's work for the full day's pay, but that the employer and employee shall consider the personal well being, the matter of leisure, the matter

of happiness in all things, therefore, not simply a matter of economy, but involving all the relationships that inhere in organized society as it is today.

We must understand it is not simply a matter of a contract between man and man, but goes out beyond that, doing a certain thing for certain pay, but something that involves all the relationships of the parties concerned. Then, I think, we need to remember that it involves something even larger than this—the interest of all society. The people of all the country as they are affected by this relationship between man and man. So often, we are tempted because our personal interests are concerned to do the things we would not otherwise consider, and so it is in many of the big plants of today. But we must wake, and they must wake up and find out that they are not run for the sake of money that is in them, but they must be managed for the sake of producing a certain kind of citizenship, and the man who is employing or the man who is doing the work without thinking of the bi-product which is really the essential product, is failing to realize how much a thing this is.

So that I say that in the very essense of it, the kind of work we do, the kind of pay we pay, all of it has a religious motive, a religious basis and its product is the high and worthy product of producing the right kind of man and woman for a nation, that that nation may be the kind of nation it ought to be among the nations of the world. And, therefore, I come back to this, that just exactly as it is impossible for us to carry on these things without a factor on the high principle of justice and good will, it is these things at the base of all religion so we cannot carry on all these things without knowing religion is the foundation of it all. And if we cannot come to that idea and carry it out where we are the employer or employee, we shall solve the safety problem and the economical and the political and social problem, and we shall be able to look into the future and this suspicion and hatred will pass away and the nation will become what it ought to be.

DR. SWARTZ: I think we ought to have introduced the Commissioner of Labor and Industry. Some of us have doubtless not become acquainted with him. Commissioner Connelley.

COMMISSIONER CONNELLEY: My dear Friends: I have very little to say except this, that you are all invited to attend the Safety Congress meetings, and we trust that you will. This religious spirit which, after all, is prevailing more now than ever before, shows that with the love of God in their hearts, no one can help stopping and helping the other fellow. We need every one in America to help us, not only in Pennsylvania. Take Dr. Little's work, follow up the work of Chancellor McCormick, and follow up the work of the other men of the country, and I am sure we will be a better nation.

I feel that after the adjustment of the war, the cruelties of the war, that the selfishness of man which has predominated in the past, will come to the place where a religious spirit will take its place. We cannot get along unless we pull together.

Our attention is brought each day to some firm or some association doing this and that, and out of it is coming splendid results. Because we are in America, we are a religious nation. We have a moral debt to our young people in our school; the moral side to their natures will inspire anything we might do, and I am sure that I am right in being hopeful when the adjustment of this war is over and the safety propoganda will be forced through the schools and churches, we are going to get just where the Lord wanted us to be; we are going to help each other.

With our meetings held at the Capitol, we hope you will come and hear these people. We have something like sixty speakers on the program and I believe you will all enjoy hearing them and I hope to see you there.

SUNDAY, MARCH 21.

Evening Session.

Service at Grace Methodist Episcopal Church.

MINISTER OF GRACE CHURCH: I am very glad to call to the attention of this congregation The Pennsylvania Safety Congress for 1920 to be held at Harrisburg March twenty-first to twenty-fifth inclusive, under the auspices of the Department of Labor and Industry. A very interesting program has been prepared, the services of today being the beginning. All other sessions will be in the House of Representatives. All announcements will be made in the public press from day to day.

There are two things for which this church stands. These two things are embodied in every movement and in all the plans and purposes of the church. First of all, that men and women may become to know Jesus Christ, surrender their hearts and lives to him and be lifted up in the holy faith of Jesus Christ. Secondly, that this organization is an organization which stands always in the community for the things of righteousness and for the advancement of humanity. It was not an accident that Grace Church gave its building to the State when the Capitol burned, it was the natural thing to do. It was not an accident for Grace Church to take a most prominent part in the war activities, for that was the natural thing to do, and we are very happy to be recognized in this Safety Congress program, and we think it a natural thing that Grace Church should serve for the first day's service.

We are particularly grateful to have with us for the speaker of the evening, one who comes to us with a great message, Dr. Riley M. Little, who is director of the Safety Institute of America in New York City. He will bring to us a message that will stir our hearts and minds, and I very heartily welcome him to this pulpit. Dr. Little.

SERMON.

By Dr. Riley M. Little, Director,

Safety Institute of America, New York.

It seems eminently fitting that the Safety Congress of Pennsylvania in its opening session should be heard in the churches of Harrisburg, thus emphasizing the relationship of the Church and the State, and also emphasizing the confidence of the State officers in the church and expressing their earnest desire for the cooperation of God's people in the administration and legislation for the uplift of man, and that service is not complete today, but it must run all through the week, through all the activities of man. This is our conception of Christianity; not a cult—a life and purpose, and in addressing you here tonight it might be well for us to recall together a few Biblical conceptions of religion, in order that we may be brought near to each other in a perfect understanding of our cause.

One of the old Hebrews said, "What did the Lord require of all, but to do justice and walk himself before God; not sacrifice and ceremony, but a life." Saint James, the Divine, spoke of visiting the fatherless and widows and to keep one's self unspotted from the world; sanctity and service. Be yet not hearers of the word but

also doers. Saint Paul he of a pure heart "Blessed are the pure in heart, for they shall see God." A good conscience and faith, and Saint John called upon the early Christians to show their faith by lifting one another and turning to the Master, the Supreme Teacher and Authority in Religion, we hear him teaching that God is a Spirit and our religion must be a spiritual religion—but not in an earthly sense. In an earthly sense he said that man should have life, and more abundantly, and one statement which is most conclusive as to his mission,—it was to impart life in all the meaning of life,—physically, mentally, spiritually, individually, collectively, nationaly and internationally.

He was the great life giver. That was His purpose in the world. Can't we see at once what idea we must have about religion? It is permanent and eternal, and demands the best in us; not only today hut at all times and every day that we live, and we cannot adequately define religion hy ceremony, nor can we draw distinctions as sectarian. The firmament declares the glory of the Lord. What is the difference between the natural and supernatural and the spiritual? Only as a matter of convenience we use those expressions; the eternal moves through the temporal.

The greatest, higgest and truest of all things is religion as taught by Jesus Christ and His prophets. Therefore, when we discuss the big questions of the Government, of economics, of industry, or development, or wealth, its distribution, their safety and health, they are all religious. Therefore, it seems eminently proper that we should speak at the beginning of this Conference in the churches as a profound religious industrial life in church and deed.

And so, tonight, I want to talk to you particularly about the safety movement. It is one of the most wonderful if not the most wonderful movements of the day; geing over the country like a crusade, making a new conscience. Of course we have always had some conscience for the safety of life and industry, hut more particularly in the last decade.

I recall, very well, visiting in the days of my college life a machine shop, and the machinery was not designed with any view to safety of those operating it. It has been only a few years since we had the safety appliances. In mines, mills and factories the last consideration almost was the element of safety. The great engineering schools have done wonderful things in developing skilled professional men for production and some factors of safety as to construction, but as to the safety of operation, it has yet to he introduced.

Trained men when they design plants, transportation companies huildings, etc., they should not only devise some thing for safety of construction, but ample margin for safety in operation. That movement is on. The public and technical schools are now introducing this, and all of the schools of our country are eventually going to do this, because of the making of money on basic industries in the United States. They have not been hard hearted, but they simply were not awake. They have gone along with the same conception of life that they had.

You know and I know that accidents will happen. You must reckon upon them, and we have had them, particularly with the development of the factory age and the enormous gravity of steam and electricity, and it is becoming as hazardous as the war itself. In nineteen hundred and twelve, in Milwaukee, Wisconsin, at a meeting of the steel industry, two men met in a little room and talked together about what could be done. In nineteen hundred and thirteen, forty men met in a hotel in New York and they organized the National Safety Council.

Twelve years ago, Dr. Josiah Strong, an authority, was frequently in the cities of Europe, in factories, studying their influence upon life and he knew their sound practice and he brought over to this country some photographs and models of what they had. At first, this did not amount to very much, but out of that

grew the great movement of safety, and they tried to visualize the conditions. The magazines of today are striving hard to train people in how to conduct their systems in a safe economical way, but this has only been in the last decade. The safety institutions who work in perfect harmony, although distinct bodies, has over 4,000 members, are constantly endeavoring to bring about safety and better conditions in the industrial life of our country. They have 7,500 plants; 70,500,000 workmen and there are being organized in every sectional local divisions of the industries in that community, with schools for the poor, rallies in the plants, trying to do what we can to make all industries safe in so far as we can. This is the movement.

Let me turn next to the problem. In the enormous development of steam and electricity the hazards have rapidly increased until they are as great almost as the hazards of war. The statistics of our experiences in the war and a similar period in industry as to our hazards would surprise you. Four million and a half men were called to war, and of those who reported to camp two millions and a few thousand sailed and landed in France. Seven hundred thousand had battle experience and from April, 1917, until the armistice was signed, the total casualites on seas and abroad, going from homes to camp, the training period in the camps and in France our total casualties were 327,000, or a total casualty list of 4,500,000 men,—a battle casualty list of 750,000, and our total casualties where 327,000. We had total deaths of 50,300 in our recent war experience.

But what is going on here at home, in America, at the same time, in our manufacturing enterprises, in our mining and our ammunition factories? In all these major basic industries we had 18,000,000 working people. The number in industry, therefore, was four times as great. For every man in the camps we had four men in these industries here at home. During that nineteen months we had approximately 48,000 deaths and 3,000,000 casualties, including all accidents which caused the loss of time, in which the man was injured.

For every year our industry, not including the homes or public accidents on the streets and highways, but just in mining and transportation, we have had these casualities for years and years, but they are greatly decreasing at the present fortunately, due to the safety work. Two million accidents of which 750,000 of them were so serious that the workman would lose four weeks or more, and twenty-two thousand five hundred of them never returned to their jobs because they died, and fifteen to eighteen thousand remain permanent because they have sustained permanent losses, tends to reduce the economical efficiency fifty per cent.

Therefore, do you wonder that we are having Safety Congresses all over the country, and the State legislation has to pass compensation acts in order that the efforts should not fall upon the man alone? Do you wonder, therefore, that we are coming together with you in the churches asking you to join us in doing everything in your power to save the life and health of these men.

Now, I have spoken of the size of the problem, but what are we going to do toward the elimination or prevention of these accidents? How far are we going toward making the places safe, healthy places in which these men have to work day by day? A great advancement is being made.

First of all, the management is waking up, and where the management is willing to spend the money and back it up, of course, accidents can be prevented, and we are trying to tell the story to all enlightened people. They have heard the glad tidings and want to know how it can be done.

Since I have been speaking, I have had five practical men from different points of the State fall in line with us, ask me questions as to how these safety methods can be adopted, and later tell me how they would work out. I hope hundreds and thousands will come in. There is a way. It costs money, but it does the job, and it can be done. Let me just cite an illustration of what has been accomplished. A

former steel industry was one of the most hazardous, where they were manufacturing particularly steel, smelting, etc., years ago. Now, the United States Steel Corporation was one of the foremost ones, and I realize that there has been a good deal of criticism about them, and I am not a proponent for any company, but it does seem fitting to cite this one, employing 250,000 men, riveting, reaming, and doing everything in the great steel business. Now, after they have been in the work seven years, and they do things most methodically, and that is why they get results.

After seven years checking up their results, the steel corporation found that charging-off what they had saved, all the costs of their engineering division chancing their plants, safe-guarding their machinery etc., all the cost of salaries for safety engineers, cost of safety apliances and safety magazines, were offset by $1,500,000 and besides saving the lives of 23,000 of their workmen as compared with their previous years' experience.

The International Sheet and Tube Company; if you ever can be fortunate enough to go through their plant you will find where the management is awake and believes in safety. From an economical ground, it pays in dollars and cents. Put in mechanical safety guards. Organize the workmen. Work not over them but with them, and you will get the results in a very gratifying degree. This company reduces their expenses fifty, sixty, eighty-five and ninety per cent., and other big corporations are beginning to realize more and more each day the economy and expediency of safety methods.

About two weeks ago the Commonwealth Steel Company, I was talking with the manager who is a safety leader—and their company is a plant where they make all kinds of frames for Pullman cars, and all those great heavy pieces of steel, where swinging buckets of molten metal go through on huge cranes, sweeping from one end of the building to the other, and pouring ton and ton of molten metal from a little tin can, a small part of which might burn him to death and I stood and watched him aghast.

I have been through a great many factories and foundries where they have spent thousands of dollars on safety, but this was surprising; this great mill was light and attractive as any factory could be, a good wooden floor—not sanded—but there were walk ways. It was good housekeeping throughout; all working together in a safe way and eliminating expenses, saving money, and after going through the various departments, we went into the director's rest room, and the manager said to me, "It cost us some money to make these changes, but it has paid." He said, "every dollar of the expense we have had in this service department we have more than saved in the number of injuries we have prevented and the lives we have saved, and it is his belief that whatever is right pays."

Now I want to say to you, my brother, and I want to say it to every Christian minister in the land that the church must send home to the intelligence of the conscience of the employed class this wonderful truth, because the employed class mostly sit in the pews of the churches today. The majority are pew holders and if there is one thing they want to learn it is that basic economy that what is right pays, or as Hadley, of Yale, puts it:

"There is no sound system of economy which is not ground in. This is a universe of truth ruled by a God of Truth, and wherever you are out of harmony, you are in a losing proposition." Employers are learning it. Some of the employers could preach much better about this than I can and every minister of the Gospel has the glorious opportunity of preaching that what is sound morally is true economically.

We want to turn to another phase, and I want you to grasp it. I was at a safety rally at a steel plant in New Haven—a typical plant safety rally. Four hundred and seventy-five men were there out of 650 men employed. They had had

that average of employees for years. They commenced safety work four years ago. Out of 650 employees, in 1916 they had 117 lost time accidents. In 1917, they had 92 lost time accidents. In 1918, they had 36 lost time accidents. In 1919, to the fifteenth day of December they had only 17 lost time accidents, eight of which were from hernia not being properly treated, producing congenital physiological effect but which were classified as accidents, and five of these were due to the careless of workmen.

Just think of that, 650 workmen in a steel plant, running all day and all night and with only five men hurt by carelessness. Is not that a marvelous thing? Four actual accidents. They were unpreventable; that is they could not be prevented before they occurred, and since January, not one. That is the American Steel & Wire Company, which is a subsiduary of the United States Steel Corporation. I want to name Mr. Palmer, for I felt the heat of his heart. He is a right attitude minded man and a square dealer in industry.

Carry it on. Make it to ring out everywhere in this country of ours. Their district manager in New England believes in it, and the assistant superintendent believes in it and the workmen all believe in it, and it comes all down along the line, and they are willing and are spending money to accomplish it. That is the first point to work for it. He has a safety committee of the plant, and they have subcommittees. They have done all that their engineering school teaches them to do. They have absolutely good housekeeping. Everything in the place is in order—law and order privileges. These are not in a clutter. Everything is harmonious, and these committees are on the lookout and they notice careless habits and then get together and make plans and hold their private court inquiry and discover the cause of their error and they have good fellowship.

At that rally, the thermometer was two degrees below zero, and yet there was out of possibly 475 men, 425 present. As we entered the hall that night, I was proud indeed to discover the spirit that pervaded. I did not want to make myself conspicuous. I had been in Washington and heard the President talk. I am an impartial witness on the subject. I wanted to see what the big boss at the top said to the man in the laboring mass, and as I went in the door I saw the assistant manager of the district and the assistant superintendent of the plant, and they were perfectly friendly with the men—equality existed—passing cigars arounds, etc.

That is how it went. Good fellowship and sixty per cent. of these men were foreign-born representatives, six or eight nationalities and about twenty-five per cent. of them speaking pigeon English. There was a demonstration of their experience for four years. They had the entire plant in harmony, and the enthusiasm and fellowship displayed at this Rally was wonderful. They sang with zeal, and then the general manager and superintendent made short speeches and some of the rest of us tried to make a speech, but the best speech made that night was the spirit of harmony and co-operation and good will that existed where they fashioned the metal into wire nails and tacks for people to use. Every one there knew the great unifying principle, the harmony-giving principle—co-operating agency building in that steel mill, and it was not only eliminating expenses, but was bringing about positive results and I want now to touch the positive value.

Not accident preventing. You think of a negative process, but in working it out, we discovered we have to use a multitude of factors. and we have been creating positive values. It has been a movement, not merely of negation, but does the next to it sometimes. The first thing it does is to iron out the wrinkles and to bring out a better feeling among the men and it must be co-operative and working together and trusting each other. Unity. Just a suggestion of the greatest ethical thought which Jesus Christ brought to the world—ethical oneness in life and next is harmony, rhythm and song and joy in work. How much it is needed. If we spend

eight, ten and twelve hours a day in toil and have no joy in our labors how interminably long the day becomes, but bring good will and good fellowship into the shop and you are making it a harmonious place to work and have co-operation.

It is distinctly a co-operative movement in its largest sense and the beauty of having the church and State give us their co-operation which comes from their discovery of our real needs and helpfulness to each other, which is a great Gospel truth. Industries are made to run things and upon economical principles, but industries will not continue unless they make money, and it can be done legitimately and save the lives of men at the same time and furthermore advance the Kingdom of God.

The influence upon you men in your business places tomorrow will be quite as persistent as the influence of the church service attended today. The influence every day which were gained. We are getting a better spirit in the industrial world. It is not one hundred per cent., I know; not even seventy-five per cent., and is struggling for a recognition, but a beginning is made, and you have an attitude of mine and if there is any one thing our country needs more than the other it is unity, harmony, co-operation and production.

Production is not merely to make money. This country is, today, one million homes short of what the people need to live in. The people have no room for expansion—one million homes short. Not only that, but last year we built less railroads than any year since the Civil War; less than a thousand miles. It is the same with everything that enters into life. Our country is under-built. Productions is what it needs—the working man's world.

Work to the highest efficiency. Eliminate, expand and bring in the movement that will reduce the high cost of living. Our men lose on an average of eight days a year. People are not doing anything about changing jobs. We need stability, less shiftlessness and unproductiveness. We are the keystone of civilization today. We have the responsibility upon us which we American people do not imagine. It rests on our shoulders. I am afraid, and I do not think there is one citizen in America who realizes the condition we are passing through today, nor how soon our strength may be tested. How can it be otherwise after five years—after knocking to pieces so many governments, and the struggling of so many nations.

I was reading a letter last night from a keen-minded man in America. He said Germany is bankrupt, France is done for and Great Britain is loitering in the ruins, and not in modern days have the great minds of Great Britain been so distraught, in the days of civilization, as they are at the present time; that is not a figure of speech. Think of that piece of land, larger than Philadelphia, in need, without light, heat or support practically. And do you for a moment suppose that all the European nations can go bankrupt and fall to pieces and not affect America?

Since the days of electricity and steam, this globe on which we live has been contracting and contracting and contracting. We are all like nations and if any one member suffers and if any one nation, the other nation will suffer, and if one falls to pieces do you suppose it is not going to test the resistance and strength of every other nation on the face of the earth?

I wish, therefore, to say in conclusion this to you, my friends, and I wish I might quote the recent words of one of the biggest men of today, who said at the close of an economic and financial article that all our schemes may not work the greatest need to us today, and the world is a large measure and the power is religion in our industry and national life. Amen.

INDUSTRY AND RELIGION

By Dr. S. B. McCormick, Chancellor,

The University of Pittsburgh, Pittsburgh, Penna.

I feel very much at home tonight in this church, not only because your pastor is a good friend of mine, and a very dear friend, because I see so many interesting faces and see also the face of one of my own beloved teachers, Dr. Robinson, so that I go back in my knowledge of this church a very great many years.

I trust that in this service this evening, under the auspices of the Department of Labor and Industry, that there will be no real break in the continuity of the services as conducted by Dr. Russell.

The subject of course is quite different from the subjects presented to you by Dr. Russell. We have abundant justification for bringing into the pulpit and into Christianity, the desirous subject of industry and society and government.

The Safety Congress, whose sessions begin tomorrow, deals particularly, of course, with the subject of safety. I trust that it will be possible for many of you to attend the sessions, because what has been accomplished since the National organization was formed some years ago has been little short of marvelous, though what remains to be accomplished in awakening all the people to the necessary thought and care, is still very great.

I attended the first meeting that was held in this Conference, in our own Commonwealth, some years ago, and that is, of course, one of the vital subjects in industrial work, extending out into every department of life in this special field, and when you hear Dr. Little, whose work concerns this Congress and the National Safety Committee Work, compare for instance the losses both in death and in injury. We know what is taking place every year and every day in our country. We have our eyes open somewhat to the duty resting upon all of us in this matter of safety, but I want to enlarge the though tonight from bodily safety even to the place where Dr. Russell brought it in.

The subject assigned to me tonight is "Industry and Religion." I wish to speak to you upon the subject of the State and religion, and I want to say at the very beginning that no matter what problems they are pressing upon us, whether they are industrial, or social, or political, educational or anything else, they can be solved in one way, and in one way only, and that is by the religion of Jesus.

Safety in the larger sense, not physically only nor spiritually only, but safety in the large sense involves the still being, not of industry only, but the well and still being of our country. Therefore, while the subject assigned to me tonight is "Industry and Religion," I wish to speak to you rather upon the subject of, "The State and Religion." I say that with the uttermost deliberation, that if we are to look forward to a time when there will come to us a feeling of security instead of a feeling of disquietness, it will come only when we have learned what Jesus did first and learned to apply those greetings to every relationship, no matter what it may be.

Therefore, however, distinguish these two spheres of thought and of application. No man can possibly expect the obligation he owes in both of these. Now, if we are to be able to do this safety work, we must come to understand some of the things. We must decide and decide quickly and clearly with reference to our conduct. Clear thinking as well as righteous behavior is necessary in this present day. As men and women, therefore, who are intentionally interested in present day problems and in the future of our country, I think we ought to determine whether we are Inter-

nationalists or whether we are Nationalists, and, of course, we all understand that so far as posing what we have been aud having an Iuternationalist's mind, that is having sympathy and understanding, sympathy with, and uuderstanding of other people and showing interest in them and trying to help them, we must be Internationalists. We have manifested this as a people, not only iu the great work of the church which has opened the way for America, but into the heart of the Natious of the world, in the Fore-Nation Activity iu which some people you kuow do not believe, but in our great relationships, in the spirit that moved us to enter into this great world of God and in the service we have reudered in relieving distress and suffering during it and siuce.

Surely, we have come to a little nnderstanding of what it means to have a mind that goes out beyoud the borders of our country in sympathy and in understauding and in service. But when we come to think about it, as far as our country is concerned, and ask ourselves whether we should be Inter-nationalists or Nationalists, in the sense in which the extreme Socialist would use the term, or even in the extreme sense of a League of Nations, conceive the idea whereby a Super-Government might be created.

We do believe in the Republic—it has the Coustitution, aud Webster helped to make it real and put it in an open paper to be put into the hearts of the men and women of the world, and hence to become a real thing in the Nation's life and the people who are a Republic must determine what this Republic is to be. If they desire, they can change it to something else because the same power that euabled them to adopt it—this Constitution—ordained a Republic, so they can chauge it iuto an absolute Monarchy, if they wish, or au absolute Democracy.

If they do it iu the way prescribed by aud ordered by the Government, we should be the infinite coucerned about this very thing. We should be extremely careful how we deal with that thing and how we deal with other things that might make possible the religion of all these men, some of whom do not understand the Republican form of Government aud other at home who are trying to overcome it. If we believe in the Republic, it is necessary for us—if we are to make the Republic secure and safe so that all of us may be able to express ourselves and realize our ambitions and possibilities, it is necessary for us to make clear and prominent whether we are bad citizeus in it or whether we are good citizens in it, and that is the vital question with every Christian man in America to auswer. It is because people do not realize where bad action goes, how far it reaches, that they do things that do not scale with justice and righteousness.

A man that sells his book or who counts votes for a friend that were not polled, and that man who sits inside his house on election day and does not vote is not a good citizeu. One of the most importaut questions good men, and now good womeu, must ask themselves is, as to what kind of citizens there are in the Republic and what they actually are and while this is not the first time—if we could get over the last thirty years we are most able to get over almost any difficulty or question that might present itself. It is not the first time the people of America have been tested, but I suspect that never have they been more severely tested than they are being tested at this present moment. And we shall get through this period, not brought on by the great upheaval of the war, but brought on by the facts as they would be brought gradually.

Now, we must particularly inquire as to what kind of citizens we are. How much we do and we actually care for life. How much do we actually care for life? We read of the fifty-three thousand men who died overseas; were killed in action or in connection with the war, and our hearts are stern, not only because they gave their lives, but the wholeness of their bodies to save the world, but because of that through which they passed in doing it. But how much are we coucerned with those

far exceeding it every year in our mills and factories and in all places where people congregate. In other words, how much do we actually care for the life of other people and their health and the wholeness of their bodies?

Sympathy as a matter of economy for a man is the most expensive thing to lose when we think of what it costs to have life, to educate a man to prepare him for his vocation and how long it takes to replace him when he is gone, not only from the economical standpoint, but how much do we care for the life of other people. That is a test of citizenship or deliberateness of the people. How much are we concerned about it? How much have we thought about it? How far do we think of all the unrest?

God is the Saviour of the world. How important is it that men should understand it and brace it and promote it? I can conceive if we could see God, thinking as we do. Meditating as we do, there is a possibility. I can conceive that that might have presented itself to Him. Shall I make a man that he will be confirmed in Holiness? Shall I let a man free even though he broke the law? God made man free, even though he choose to break His law and brought upon Himself all of the misery which must follow. In other words, a part of man is freedom. An essential element of his very personality is freedom. Now, I say in order to be good citizens we must know something of what this is. What it means in the aspiration of man; what it means in the final development of man; what it means in the making of a Nation, and America cannot be saved in a large sense until we have come to a comprehension of the varied essentials, that that freedom and liberty is a part of man's personality of which he must not be deprived. It is his personal property?

The property question—how much do we care for property? You know there are some men who would take without an equivalent the property that they need, without any authority whatever. Why should they not? They say the reason that they would do this thing is in order that they may make use of it in a better way than men have used it in the past. Do you think all of the people would use it? Taking it away from those people who have not had part in many instances. Do you know anything about property? If you own property, do you know what right you have to it? Have you ever thought about it as a thing when it belongs to a man. It is a sacred thing and is not to be taken from that man unless an equivalent is given to him. Millions of people do not believe in it now.

If you have property, it is a thing that belongs to you, as does your vocation. Can we confiscate it because bad men use it as a bad purpose? Or can the man that has only a little of it spend it as he feels, on himself without regard to other people. Can he do with his dollar just as he pleases or is it something that somehow has an essential value and should be used for the benefit for the whole of Society itself? We have got to save property and we have to know why we believe in it and defend it if we are going to be successful against those men who desire to do as they wish and please.

I cannot spend more time in discussing these questions. The question of industry and how vital it is in this particular time to have the men conduct it, conduct it according to the Law of Jesus, and the men who work in our industries should look out to see that they, too, must care for society for the public. I cannot stop to discuss the question of education which is so vital in a Republic such as ours. I cannot stop to discuss the other questions that are before us and which must have our thought and attention and our consecrated, devoted and earnest understanding, because it would take entirely too long.

The question is this: Are we good citizens in this Republic or are we bad citizens? Are we interesting ourselves in those fundamental questions upon which the life of the safety of the Nation depends?

I come to the last question. If we say we believe in Nationalism and if we say that, the form of it is a Republic, that one in which most of use believe, and if

we say that, we are really trying to be good citizens in this Republic whose safety depends upon us. There is one thing more that I want to ask in conclusion. Whether we believe in one other thing and that is in the United States of America and the Nations of the world?

I have referred to the League of Nations, to Inter-nationalists, although I am not speaking of that now. I am speaking of that which underlies the possibility of any league among the Nations which must underlie everything that will bring them more closely together. That already is the question of our own personal attitude. How far do we realize our friendship for other people? How far are we in sympathy with others? How far have we stopped to understand that and consider that? Here in our own country, as they have come from every nation in the world, how far have we tried to understand them when they come to our very door and they begged us to take them in and help them? How far is there good will in us? How far is there willingness in everybody to respond to the appeal of the needy poor or co-operate and help, without the opportunity during all these years?

In 1820, no country in the world was so homogenous as America. We have had the opportunity, but how much have we tried to understand and to make Americans of those who have come here and to understand the need of those out yonder, who today more than in any time are holding out their hands to us for help? That question, too, must be answered and if there is in us tonight that power which enables us to believe that America is planned by God, if it is here to produce a certain type of man and woman, here to develop a certain form of ideal both in character and in nationality—the ideals of the free people with free opportunity belonging to all. If there is in us tonight that which makes us believe that America stands for something which the rest of the world must have, then how far have we sought to answer this question both from an optional point of view and from the point of view from our own National safety?

I come back from the places from whence I started. If we are to solve these questions in America and if we are to solve these problems we must go back to explain what justice is and what righteousness is and truth is and labor is and good will is. The very fundamentals upon which civilization rests, the very fundamentals upon which the throne of God rests, then we must use these things, the fundamentals of religion in solving these problems of ours. If we expect safety, National safety, safety of our institutions and safety of our industrial system, the safety of our schools and churches and the safety of our people, we must come back to the teachings of Jesus and learn them over again and put them more deeply into our lives than we have ever done before. I thank you.

MONDAY, MARCH 22

Morning Session.

CHAIRMAN: George A. Hoverter, Mayor of Harrisburg.

ADDRESS OF WELCOME

THE MOVEMENT FOR SAFETY

By Clifford B. Connelley, Commissioner,
Pennsylvania Department of Labor and Industry.

It was a murderer that first asked the question, "Am I my brother's keeper?" A lack of appreciation of the rights and welfare of others still carries with it the full odium of guilt. Any movement, therefore, that has within it the opportunity of creating a better understanding of our relationships and duties must challenge our interest. This is the appeal of the Pennsylvania Safety Congress, which begins its sessions to-day, as a part of the great movement for safety which is sweeping over our nation.

THE SMALL BEGINNING OF THE SAFETY MOVEMENT.

The story of Safety First, to those of us who have been privileged to be identified with it almost from the very beginning, is one of rare fascination. It was only shortly before the beginning of the great world war that a few men got together and wondered how the awful toll of deaths and injuries, due directly to our industries, could be prevented. Attempts had been made by government agencies, welfare organizations, labor bodies and individual industries to show the extent of industrial accidents, but no adequate facts could be summoned with sufficient force to stir the imagination and hearts of a people who were too busy making money. It remained for this small group to effect an organization that aimed to act as a clearing house for the various industries to gather the facts, suggest preventative measures and pass them on. From a very small beginning with no philanthropic foundation or other financial backing of any proportions, through sheer faith in a great cause these men went ahead and promulgated a systematic publicity campaign that has never been equalled for the results obtained in so short a period of time. Today, there is not a single industry worth the name that is not enlisted in some way in the cause of accident prevention. If this movement has done nothing more than to focus the attention of America at this time, when we can best understand it from our war experience, upon a statement of concrete facts and figures summarized as deaths due to industry, the cripples in industry, the loss in money, not mentioning the hardships and sufferings, it would have rendered a service eminently worth while.

THE SAFETY MOVEMENT AND INDUSTRY.

But the Safety First movement is more than a statistical bureau of industrial fatalities of accidents and economic losses. It has become a part of the very bone and sinew of industry. Safety First in industry is synonymous with "good business." It enters into every machine that is bought, it suggests the methods of installation, it controls the channels of motive power that enter into the operation of the machine. It is a part of the physical plant or establishment, entering into the matters of housing, the lighting and the ventilation. It affects the problem of "manning" industry, touching very vitally employment and labor turnover. It prompts welfare work, Americanization programs and the better training of foremen, the non-commissioned officers of industry, as well as the men in the rank. It has given rise to the safety engineer, the new industrial administrative officer. It means more money in the workmen's pay envelopes through steadier and better work, and shows itself in the increased dividends of the employer and the stockholder. No industry that has given Safety First a fair trial will deny that it is good business.

THE SAFETY MOVEMENT AND THE COMMONWEALTH OF PENNSYLVANIA.

The safety movement has also become a very considerable force in the affairs of government. We need not go outside of our own Commonwealth to indicate this. The Department of Labor and Industry is charged with enforcing the labor laws of the Commonwealth, and the underlying thought in the enforcement is to make industry safe for the worker and the worker safe for industry. The Industrial Board of the Department devotes a considerable portion of its time to creating safety standards, thirty of which have been issued, providing for the protection of the "life, health, safety and morals" of workers. It has approved over 150 safety appliances as safe for the industries of Pennsylvania. It also functions in the matter of Child Labor and Women in Industry which are peculiarly safety problems. The Workmen's Compensation Board and its administrative arm, known as the Bureau of Workmen's Compensation, are based solely on the safety idea. When industrial accidents cease, there will be no need for compensation boards. The Bureau of Inspection as the field service, and the Division of Hygiene and Engineering, as the technical experts of the Department investigates accidents and suggests remedies. The Bureau of Rehabilitation takes care of the industrial cripple or injured. The other bureaus of Employment, and Mediation and Arbitration, while not so directly related, are not apart from the claims of industrial safety. Our experience as a governmental agency in the field of safety convinces us that of all panaceas and solutions that have been offered for the securing of industrial peace, the safety movement has within it the greatest promise towards attaining this end.

THE SAFETY MOVEMENT AND EDUCATION.

A new aspect of the importance of the movement for safety is the emphasis that it is receiving as an educational requirement, especially in the public schools. For several years the higher institution of learning, particularly the technical schools have been teaching it and some offer courses for the training of the safety engineer. But teaching Safety First in the grades and in the high schools is more to the point. The pioneer work that Dr. E. G. Paine is doing along this line under the auspices of the National Safety Council, is a most valuable contribution to the cause of elementary and secondary education. We hear much of overcrowding our courses with modern or fad subjects, but the important bearing that Safety First has upon

modern life demands that room be made for its construction. Train a child to think "safety," to talk "safety," to act "safety" and he is the more likely to get old because he had not departed from his early training. In this connection, too, it is well to remember an oft repeated truth: "What you would have appear in the life of a nation you must first put in the school room."

THE SAFETY MOVEMENT AND RELIGION.

A further development of what began purely as a movement for industrial safety is the moral and religious significance that is being given the movement. The church recognizes the human and spiritual values and is always ready to endorse the safety program. An interesting trend in connection with our Safety Congresses and "No Accident Weeks," is the increasing part that the church has in the program. This is proper; for the safety movement in the large is distinctly religious and the purposes underlying it is essentially a product of Christianity. The application of the principles of Christ to our industrial relations finds an immediate point of contact in this safety movement.

THE PENNSYLVANIA SAFETY CONGRESS.

As a Congress, we are interested primarily in the purpose for which it was called, as set forth in the letter of invitation sent to you by Governor Sproul, namely:

> "This Congress is a continuation of the Welfare and Efficiency Conferences which were held in the past. Due to the war, these have been discontinued since 1917. It is evident that too much emphasis cannot be placed upon the matter of industrial safety, with the purpose of reducing the great number of injuries and deaths.
>
> The topics to be discussed at this Congress will cover the pressing problems that face the industrial life of to-day. It is particularly fitting, therefore, that this Commonwealth should be the center of interest for the industrial leaders of the Nation, especially at this time."

We have not neglected, however, to give emphasis to the educational and religious phases of the safety movement as a survey of the program will reveal.

I want to introduce the chairman of our meeting this morning, Mr. George A. Hoverter, Mayor of Harrisburg, who has taken a keen interest in everything the Department has been doing. We have had the co-operation of all the people of Harrisburg, and it is gratifying indeed to know that the Chief Executive of the city is always willing to help us. I am indeed pleased to introduce to you Mayor Hoverter, of Harrisburg.

MAYOR HOVERTER: Ladies and Gentlemen: The immediate preparation and execution of the practical program for the industrial safety of the Commonwealth of Pennsylvania is imperative, and undoubtedly should be entered into by all those who are interested in all the industries in Pennsylvania. This meeting is called for that purpose, and we are very fortunate in having with us this morning prominent and able speakers who will present the subject to you in an intelligent manner, and at this time I want to present to you a gentleman who was born in Silver Lake, Susquehanna county, Pennsylvania; for a long time, a student of economics and prominent in educational industries of the country, and since 1903 he has been Commissioner for the United States Labor Statistics. I am pleased to introduce to you, Dr. Royal Meeker.

THE COST OF INDUSTRIAL ACCIDENTS.

By Dr. Royal Meeker, United States Commissioner of Labor Statistics.

That the cost of industrial accidents is enormous is recognized by all who have any knowledge of industry and of statistics. Just how enormous the cost is we do not know and can not even guess. We do not know how many industrial accidents occur in any State in the Union. We know even less of the nature, results and social cost of these accidents. The most important of all industrial accidents, unemployment, we have not even come to recognize as an accident at all, although it causes vastly more slowing down of production, demoralization, distress and suffering than all other industrial mishaps.

No doubt most people suppose that very accurate and up-to-date statistics of industrial accidents causing physical injuries exist in the 42 States, four Territories and in the jurisdictions of the United States Government, because of the workmen's compensation laws. Nothing could be further from the truth. Statistics of accidents, their results and their cost have been compiled in but few of these compensation jurisdictions and such statistical compilations as have been made are utterly incomparable because of the marked differences in the provisions of the different laws and the lack of standardization of the methods of statistical presentation. There is an astonishing lack of uniformity in these laws as to the industries and occupations covered, the wating period and the amount of money compensation, and the medical benefits provided.

The compensation law of New Jersey includes farm and domestic labor and fishermen besides industrial workers in the narrower sense. Mr. Carl Hookstadt of the Bureau of Labor Statistics' staff estimates that perhaps 98 per cent. of all workers may be brought under the New Jersey Act. In Alabama, on the other hand, the exclusions are so numerous that the percentage of workers which may possibly be brought under the protection of this so-called compensation law is only 33.6 per cent.

Mr. Hookstadt in his estimates has given the benefit of the doubt in every instance to the laws, consequently his estimates err on the side of too great liberality. This is noticeably true of Pennsylvania in which he credits the law with a coverage of 88.8 per cent. of all wage earners, although farm, domestic and casual labor are excluded, and Pennsylvania is, with all its industries, a great agricultural State. Maine, with an estimated coverage of 72.9 per cent. excludes farm, domestic and casual labor and logging operations, one of the most important industries, and the most hazardous one of the State. Tennessee, with an estimated coverage of 37.2 per cent. excludes establishments with less than 10 employees, farm, domestic, "casual" and public employees, and coal mines which employ more men than any other industry of the State in this the most hazardous, perhaps of all industries.

There is no rhyme or reason to the exclusions of the laws in the different States. Some exclude non-hazardous occupations and industries, other exclude the hazardous occupations. Taking all the States together, Mr. Hookstadt's very liberal estimate credits the compensation laws with a coverage of about 65 per cent. of the workers. When we consider the number who are shut out by failure to elect in those States having elective laws and the number who are ignorant of their rights to compensation under the law, I think not more than 40 per cent. of the wage earners are actually enjoying the meager protection of our compensation laws.

The lack of uniformity in coverage is equalled or surpassed by the inexplicable inequalities in money and medical compensation benefits provided in the laws. The length of the waiting period too varies considerably, thus causing the amount of compensation benefits to vary. It is impossible in this paper to indicate the extent of the variations in the amount of compensation provided. It is even more impossible to ascertain the reasons or the vagaries which obsessed the legislators in enacting some of the more peculiar of the compensation laws. But surely, it will be said, the States must know how much is paid out each year for compensation and from these figures a reasonably accurate calculation or estimate of the cost of industrial accidents can be made. Perhaps the States know how much they pay in compensation each year; but if they do they, with few exceptions, keep this valuable information strictly to themselves. Even if this information were available, it would be an impossible task, for reasons pointed out above, to translate it into the money costs of industrial accidents to say nothing of the other costs.

It does seem incredible that of the 42 jurisdictions which have had workmen's compensation laws long enough to give them accident compensation experience, only 26 have found it possible or worth while to publish anything showing the costs of compensation to the employers covered in their acts. Of course, many compensation commissions may have knowledge of what they are doing which they do not give to the public. Employers, employees and the undefined public have a right to know all the facts regarding the number and severity of accidents and the amount of compensation paid. This information is so easy to compile, it would seem possible for all jurisdictions to make it public every year. Even the astonishingly meager information extant is discouragingly vague and impossible of interpretation.

It is too soon to expect reports for 1919, but California, Montana and the United States Compensation Commission have already reported for that year the money payments for fatal and non-fatal cases and the medical costs. Only five States, California, Maryland, Minnesota, Montana and New Jersey, report compensation payments separately for fatal and non-fatal cases and for medical treatment and burial for the years 1916 to 1918 inclusive. Michigan reported these costs for the year 1916 and then quits, Nebraska for 1917 and 1918 and the United States Employees' Compensation Commission for 1918. Oklahoma and Wisconsin show for the three years, 1916-18, the total money compensation and the medical and burial benefits. Hawaii, New York and Vermont published this information for 1916; Texas for 1916 and 1918; Massachusetts for 1916 and 1917; Iowa for 1917 and 1918, and South Dakota for 1918. Ohio and Nevada have published the total amounts paid for compensation and burial of all kinds for 1916-1918; Connecticut for 1916 and 1917; Pennsylvania for 1916; Colorado for 1917 and 1918; Indiana for 1917; Kentucky and Wyoming for 1918.

Seventeen jurisdictions have thus far published for the year 1918 the total amounts paid for all compensation including medical benefits. The years cover quite different months. Some are calendar years, some fiscal years and some compensation years determined by the date when the compensation laws become operative. The total amount of all compensations as reported by these 17 jurisdictions was $16,782,610. The total estimated number of workers included therein was nearly 11,600,000 and the total estimated number entitled to come under the acts was 5,360,000. If we assume that five million workers were actually brought under the acts, the compensation payments would amount to a yearly charge of $3.36 per employee. The utter uselessness of this average of a whole series of averages is shown by bringing it into contrast with the average cost of $4.85 per employee for Ohio, $4.39 for California, and $1.72 for New Jersey. These wildly different costs bear no readily ascertainable relationship to the actual costs of accidents in these different States. The real cost of accidents in Ohio is not of course 2½ times their cost

in New Jersey. The differences are due to differences in industries covered, waiting period, amount of compensation provided, maximum and minimum limits and other differences in the acts and the administration of them.

It will be readily conceded that the way of the proverbial transgressor is no harder than that of the virtuous statistician bent on compiling statistics of compensation payments in the various compensation jurisdictions within the United States. Why worry about these compensation payments by the States? If we had them they would not mean a thing as to accident frequency, accident severity or accident cost. Very true, but the employers, employees, legislators, and administrators of each State should know how much is being paid out every year in their State in compensation to injured workers regardless of the fact that these amounts represent only a fraction of the actual social losses due to industrial accidents in each State.

It is a waste of time to try to compute the costs of industrial accidents from the reports of compensation payments made by the States. It is, however, well worth while to show just how far we still are from knowing anything definite about these costs or even about the payments made by employers under the compensation laws. If what I have said will have the effect of spurring some delinquent State to provide for something like adequate statistics of accident occurrence, results and cost, I shall feel that my labors with the not very fascinating or illuminating reports have not been in vain.

Before leaving this arid statistical desert, I wish to call attention to the fact that compensation payments are increasing year by year in all the States which have published figures which enable us to make comparisons. The unwary might jump to the conclusion that these increases are due to the growing number of industrial accidents. It may be that accidents are increasing. It is a shameful confession to be obliged to make, but we don't know whether the net result of our efforts to reduce industrial accidents has been more accidents or fewer accidents, a greater or a smaller loss in time disability. I cannot formulate a stronger plea for better and more complete statistics than these poor mute figures shout from the pages of these reports. We do know that certain plants have cut down the frequency of accidents.

The analyses made by Mr. L. W. Chaney of the accident records of some steel plants show that they have not only reduced their accident frequency rates, but, what is of real importance, they have cut down their severity rates as well. Fewer man hours are lost per 1,000 hours worked by some establishments today than before the war, and that in spite of most adverse conditions. Whether these encouraging results apply to the whole steel industry or not, we cannot say.

As to what is happening in other industries, we are as blissfully ignorant as the ostrich with his head buried in the sand. Some individual plants require very complete reporting of every accident and some of these plants tabulate and analyze these reports for the purpose of reducing accidents and accident costs. I am bound to say, however, that only a few of the largest and most progressive employers know whether their accident experience is improving or growing worse. Some who think they are improving, fool themselves into so thinking, because they are able to show a smaller number of accidents or a smaller rate of accident occurrence. If these employers had their accidents tabulated by severity of injury their time losses would show greater than at any time since they began to preach the gospel of Safety First to their workers.

I am ready to believe that the accident severity rate has not grown worse since 1912, when the safety movement became fully organized. I am ready to believe it, because I want to believe it. Individual plants and great corporations comprising many plants have reduced their accident rates, both frequency and severity rates. What has been done by one employer, or perhaps one industry, can surely be done

by many or all. I am quite willing to believe that the growiug compensation bill, the universal experieuce in all States, is due to extending the coverage of the laws, liberalizing the compensatiou provided, cutting down the wating period, better and more enlightened administration methods and practices, and the growing kuowledge of the workers as to their rights under the laws. Let us hope these explanations really explain this phenomenon. But why should we trust to bliud faith when the expenditure of a few thousand dollars would give us assured knowledge. Faith is a beautiful trait. In its proper place it is a virtue greatly to be praised; but it is uo fit substitute for statistics in determining public policy or the results of a public measure.

Of course, the economic cost of iudustrial accideuts was euormously greater before compensatiou laws were enacted. It cannot be too frequeutly or emphatically stated that providiug for compensation payments to injured workers does uot create a new cost to be borne by industry aud the commuuity. It merely readjusts the burdens, thereby making them lighter to carry and incidentally briuging home to employers and the public the fact that industrial accidents are an expensive luxury. The first workmeu's compensation laws were advocated and their enactment secured largely uuder the theory that the vast majority of industrial accideuts occur through nobody's fault or negligeuce and that therefore the theories of employer's liability, employee's carelessness aud contributory uegligeuces were all wrong.

If necessity is the mother of invention, experiencee is its father. A short experience under compensation laws couviuced insurance carriers and insurance payers that industrial accidents are not a Divinely ordained and established part of the great plau of Creation. and therefore beyond the power of mere mau to control or influence in any way. The more enlightened insurance companies aud employers had made this important discovery loug before compensatiou legislation had been thought of in this country, but it required the paiuful experience of payiug for industrial iujuries aud the uecessity of reduciug these charges on the costs of production to bring forth the idea that industrial accidents are uot chance occurrences like thunderstorms, earthquakes aud volcauic eruptious, but are, in most iustances, the inevitable results of uegligence on the part of either employer or employee.

Do uot misunderstand me as advocating a returu to the old employers' liability system with the common law defenses. It would be difficult to devise a more unjust system than that. In few cases of iudustrial accident can negligence of the employer be proven. Negligence on the part of the employee is more obvious, but even that is not easy to prove. The old liability system was thoroughly bad with its expeusive litigatiou cumbersome aud occult court procedure, long delays, uusatisfactory verdiets and consequent aggravation of class suspicious aud hatreds. Today, however, we who take pride in working for the common welfare advocate the workmen's compeusation laws more vigorously than ever, not beeause industrial accideuts are iuevitable, but beeause they are inevitable but avoidable consequences of bad shop and machine construction, or bad shop practice.

The best way to improve these bad features is to make it costly to the backward, unenlighteued employers to continue them or allow them to be continued. I do not, of course, say that all that has been accomplished in the way of reduciug, or preventing the increase of, our accident rates is the result of the enactmeut of compeusation laws. I do say, however, that the compensation laws have done more than any other one thing to stimulate interest in and give au iutelligent program to the Safety movement. Accident reports are for the first time required by law and some progress has been made toward gathering and compiliug standard accident tables. The accident records are being studied for the first time by capable statisticians and safety men for the purpose of ascertaining how, why and what accidents occur and of preventing as many as can be prevented. Our

knowledge of accidents, like our compensation laws, is still very imperfect, but we at least realize that industrial accidents are costly and that they are to an unbelievable degree, preventable.

As to unemployment, the most costly and the only purely industrial and occupational accident, we have no reliable record whatever. A man may break his arm by falling over a cuspidor in his home; he may be killed by any fool driving an automobile. Everything in the way of a physical injury that can occur to him while working at his regular occupation can happen to him in his home, on the street, at church, any place he may be. But the only way he can become unemployed is to lose his job. Non-industrial physical injury accidents are probably quite as numerous as and even more destructive than industrial physical injury accidents. There is no such thing as non-industrial unemployment. It is therefore the only purely industrial hazard.

There are two very distinct kinds of unemployment,—what we may call out-of-work unemployment and unemployment on the job. Both result in material loss to the individual worker and to society and in the demoralization of the worker. Out-of-work unemployment is a self-explanatory term and needs no elucidation. By unemployment-on-the-job, I mean the lost time and consequent slowing down of production because of the deliberate expert loafing on the part of the workers, or the lack of a proper system of routing of work, and insufficient reserves of tools, machines and skilled pivotal men to keep the whole force working smoothly.

The unemployment due to strikes excites most attention, because the newspapers and magazines play up such dramatic manifestations. Newspaper correspondents are in the habit of setting down their guesses as to the cost in money of the more important strikes while some especially ambitious writers have attempted to estimate the money cost of all strikes for a selected period. I do not wish to try to diminish the seriousness of the menace or the appalling waste occasioned by strikes, when I say that the individual and social losses from strikes are relatively unimportant as compared with the losses from unemployment of the regular, orthodox, undramatic type that doesn't get any newspaper advertising. The cost of strikes is commonly displayed as losses of wages to the strikers, loss of profits to the employers and loss of interest on capital invested. These estimates are necessarily crude and often misleading.

It sometimes happens in a big strike that the curtailment of production results in such a sharp advance in the price of the product that the employer makes not a loss but a net gain. In such a case idle capital earns more for the owners than busy capital. But this fact does not convert the capital loss into a gain. In such a case the buying public and the wage earners bear the whole burden of the material losses incident to the strike. If the wage earners win the strike they may be able to drive such a shrewd Scotch bargain as to shift the entire burden of loss to the ultimate consumers. It would be more accurate to calculate the material losses of a strike in terms of product unproduced and then allocate the losses between the several parties at interest, taking account of changes in prices and wage rates in the industry.

If the material losses were to be computed as indicated above at the expense of great labor and much time, the computer could triumphantly display an appallingly huge sum of money which would be a more or less inaccurate estimate of the material cost of the strike or strikes and which would give no hint of the really important and significant costs of these industrial upheavals. Money can not measure the class suspicion and hatred generated or aggravated, the demoralization of the workers resulting from idleness, especially if the strike is lost, the inconvenience, destitution, suffering and death to workers and to consumers which so frequently accompany a big strike bitterly contested.

Strikes and lockouts have contributed their thousands to the ranks of the out-of-workers, but irregularities and failnre in supplies of raw materials, transportation and demand for commodities produced, and lack of proper organization in industry, have contributed their millions. No statistical statement is possible, for no accurate information exists as to the time lost by reason of strikes, to say nothing of our almost 100 per cent. of ignorance of the time lost due to other causes. We do know in a general way that unemployment has existed during prosperous conditions of industry to an appalling degree.

For years the States of Massachusetts and New York published figures showing percentage of unemployment among trade-union members in those States. In Massachusetts the unemployment percentage among unionists rises to 17.9 per cent. in 1914, while the minimnm at any time since 1908 was 3 per cent. in 1918. The unemployment percentage is even greater in New York State, the maximum being 40.1 per cent. in 1913 and the minimum 5.9 per cent. in 1912. Unemployment among trade-union members in Great Britain, as shown by official figures, rarely exceeds 8 per cent. and drops as low as three-tenths of 1 per cent. of the total membership. No accurate comparisons between Great Britain and New York and Massachusetts are possible because unemployment in Great Britain is determined by the receipt of trade nnion unemployment benefits which are paid for varying periods that differ among the nnions—nsually only after the member of a union has been out of work for one week and not more than 26 weeks.

Few American unions pay out-of-work benefits and the trade nnion secretaries in most instances reported as unemployed all nonstriking members of their union who were not actually working on a given date or over a period of time. The British figures were, of course, much more complete and accurate than the New York and Massachusetts figures, for they were based npon numbers actually receiving unemployment benefits, whereas the American figures included only those reporting to the union headquarters or the number estimated (guessed at) by the secretary. The British fignres differentiate those out on strike or lockout from those nnemployed through other causes. The American figures are supposed to exclude workers out on strike. How much the American figures would be reduced if we could exclnde all unemployment under one week, or hew much the British figures would be increased if all unemployed were counted on a selected day, we can only guess.

It seems inescapable, however, that if the figures could be corrected and brought to a common basis, unemployment among trade unionists would be shown to be several times more prevalent in the United States than in Great Britain in the years before the war. How unemployment in the two countries would compare today we have no means even of guessing. The unemployment insurance act of Great Britain enables the government and the people to know very accurately the amount of employment and unemployment at any time.

In the United States we know less than ever about unemployment because both New York and Massachusetts have given up their efforts to ascertain the number of trade union members out of work. The only official figures we now have bearing on employment and unemployment for the whole country are those published in the Monthly Labor Review, giving for a limited number of plants in certain industries, the number of employees on the payroll and the amount of the wage bill each month, and the statistics of strikes which are carried from time to time.

The percentage of nnemployment among non-union workers is always higher than among union members. This was especially true of the United States before the war, when it was the deliberate policy of the largest employers of labor, especially unskilled or semi-skilled labor, to keep on tap, as it were, a large reserve force of labor upon which to draw in case of strike or any emergency requiring additional

men. This practice has almost disappeared because the surplus supply of labor has been succeeded by a dearth of labor in most localities and industries.

One inevitable result of the very profound changes iu labor supply has been to iucrease the proportiou of the unemployed who are out of work because of strikes. But we must uot too hastily jump to the conclusiou that all or most unemployment today is due to strikes. No definite statistical information exists, but from a study of such cases as have come to my attention, I am couvinced that strikes today, as always, are iusignificant in causing much less stoppage of work iu comparisou with unemployment due to dearth of raw materials, lack of orders for output, iusufficieut trausportation, lack of a properly balanced organization of industry, lack of an iutelligent employment policy for hiring aud handling meu, failure to gaiu and keep the good will of employees, failure to make use of the tremendous latent creative force lying dormant in the workers.

I have heretofore been unfavorable to unemployment iusurance in this country for the reason that we lack the necessary machinery to carry such a law into effect. The dangers of iudustrial catastrophe and depression which lie in the not distant future make it absolutely necessary that we adopt now a constructive program to deal with unemployment. For the guidance of legislators aud administrators, the facts as to employmeut and unemployment must be known. A proper system of unemployment iusurance is, I thiuk, iudispensable for ascertaining the amount and kiud of uuemployment. It is not necessary that the unemployment beuefits be so large as to support idlers in idleuess. The trained expert loafers who work at their craft all-the-year-rouud, would of course, be excluded from benefits. The good old law which John Smith created and executed in the colony of Virginia should be revived. "Those who wou't work can't eat." Unemployment insurauce connotes as a necessary part of the system, that everybody shall work when suitable work is offered.

The cost of this most costly and destructive of all industrial hazards, uuemployment is appalling. Its money cost reckoned in terms of product unproduced, services unrendered, and capital goods lost or deteriorated in value, I estimate, or guess, would amount to more thau half the value of the yearly product of all our industries. This meaus that we are operating our industries on a 66 2-3 per cent. efficiency basis and are losing by not producing something like 35 billiou dollars a year, just because we have not yet recoguized that ignorauce, however blissful, is mighty expensive.

Of course, unemployment insurauce alone will not increase our national income to more than 100 billiou dollars at a single bound. But it will help to call attention to the cost of unemployment just as workmen's compensation laws have called attention to the costs of the less costly aud less demoralizing industrial accidents which result in physical maimiugs and deaths. The aim of all emloyers, employees, managers, and engineers, should be to prevent all preventable industrial accidents. In order to do this they must be informed as to what, where and how accidents occur, the results of such accideuts and the means by which they may ——be reduced or eliminated. The greatest need in the world today is for facts—statistical facts. Every dollar spent for real statistics will save two dollars which will otherwise be wasted in needless experimentation.

MAYOR HOVERTER: The next speaker on the program is a gentleman who, like many other employers, disliked the way workingmen were behaving. Unlike many others, however, he reasoned that something must be happening to the workers that would account for their actions. His desire to find out what was happening was so keen that he took a leave of absence from his job as director of personnel of the Hydraulic Pressed Steel Company, of Cleveland. He donned overalls; let his beard grow, and for seven months just previous to the steel strike worked as an unskilled laborer in steel mills, ship yards, railway shops and coal mines. He bunked and ate with his fellow workers. He came back to the land of the white collar with a vivid impression of what was on the worker's mind. It was on this subject that he spoke recently in New York before the industrial group of the Society for Ethical Culture. Mr. Whiting Williams, Director of Personnel, of the Hydraulic Pressed Steel Company, Cleveland, Ohio, who will address you on, "The Economic Waste Due to Relations Between the Foremen and the Employees."

THE ECONOMIC WASTE DUE TO RELATIONS BETWEEN FOREMEN AND EMPLOYES.

By Whiting Williams, Director of Personnel, Hydraulic Pressed Steel Company, Cleveland, Ohio.

Mr. Chairman, Ladies and Gentlemen: Before I proceed to my speech, I should like very much to say a word in very high approval of Dr. Royal Meeker, on the subject of The Cost of Industrial Accidents. This is a subject which requires much thought on the part of every employer. It is one of the most serious burdens upon industry and national life of today and the public ought not to have to stand for it.

In getting at my own subject, I feel like taking the example of the colored pastor who said that in thirty years of ministerial work we had always divided every sermon into three parts: first, I tell them what I am going to tell them; second, I tell them why I am going to tell them, and third, I tell them I have already told them. And what I am going to tell is what my experience of seven months has been, and what my observations have been in regard to waste due to the present state of relations between foremen and workers.

It is so costly as to make, I think, a very serious increase in the cost of production, and, therefore, in the cost of living. It is serious enough to make a serious increase in the industrial unrest of this country, and to cause a perfectly colossal loss in the spiritual value of the lives of thousands in this country. But, and I shall not try to elaborate, I want to speak to you particularly as to my personal experience in the field of steel and to some extent in coal, although I did come into the field of the railroad round house, as helper, and into the shipyard as a helper, and I tried very hard to get as nearly as possible, the impression of the worker as they get the impression of the foreman.

I think I can give my findings from the point of view of the workman because I feel that I did get very close to him in spirit—not only in the shipyards but in their boarding houses—their bedding and room space. In every way, I believe, I got very close to the working man—a little too close sometimes, sleeping in the same bed. Many times they were drunk and hocked the clothes on their backs in order to get the last dollar possible with which to return back to his bed along side of you.

In that time people said that you can get low-browed; that you won't come through with the sort of thing you are after. I would feel better about it all except that my paths led me so far as to hurt my feelings. Only one chap gave me the benefit of my college education and told me how to better myself. He said, "Where do you get that stuff," when I tried to discuss with him some matter of our every day work. I referred to his source of intuition rather than inspiration. He went on to say, "For five years I was a bar tender," and getting more confidential, he said, "If you are banking on staying around here, there is something wrong some where; either you have committed some crime and are running away from the disgrace or you would not be here at four bucks a day."

On the other hand my boss, drawing $8.00 a day, while I, as assistant, only drew $4.00 a day, was much amused when I asked him if he did not feel the need of more education. His response was, "Hell, you ain't in this job for education." I must say that my foreign tongue did help me get nearer, because I was able to speak French, Italian, Greek, and I regretted not speaking Polish, but my chance for speaking Polish was small.

What is the function of these foremen? The function of the foreman is to obtain the maximum of the M. P. Us. The man who brings them in and expecting to

get the maximum result out of the men and maximum C. W. Ds., must realize that this man is bringing in a certain number of M. P. Us., and that he must get the men to realize those M. P. Us. It is perfectly natural to assume that because they pay for these M. P. Us. that he will get them. He takes delight in giving just enough to keep from being fired. It gives him the unhealthy satisfaction of thinking he is getting back at the foreman that he is not giving back what he is getting and that is be able to hold back these M. P. Us., gives the laboring man a certain amount of high standing.

I have in mind my coming into one of the places where my job was throwing out bricks under the supervision of a boss. I went at it enthusiastically. I worked assiduously for a long time, and I thought it was a long eight-hour turn and he kept piling on the work. Foremen of today know that they can not do that with the laboring class now. I was scrutinized by the whole gang of workmen, Italians, Slavs, Persians, and negroes. Finally one of them tapped me on the shoulder and said, "Hey, what the hell you call yourself; this is no job like that. Take it easy," and I had to take it easy. Finally, I was just moving and you would have had to sight me by a stancion, and the longer I stayed on the job the less I did, for I could side-step these M. P. Us., and the less I did and the more I put over, the higher I stood with my buddies, and the only instruction I was getting was the underground instructions that came from my associates and the foreman, "Take it easy—go slow."

I have in mind a fine chap who presents the whole philosophy when he said, "I have been in steel forty-two years and, believe me, I can tell you how to get along. Keep your eye on the boss and take it as easy as you can and when the boss is coming your way, work like hell." That states the whole situation between the labor economic and the foreman. The foreman disqualifies himself by his failure to get the maximum M. P. Us. over the C. W. Ds. A problem of desire and delivery and school. The man has to be made into a man who wants to give what he has got and what he pays for, and the man who can best make him into a "want-to" and then a "know-how-to."

But there is no instruction ordinarily by the foreman and what instruction there is, is reverse instruction. That is, instead of saying, "Now, Joe, I want you to do this. It is a sixteen-foot throw, and you have to do this and that, and show me how" The way most instruction was given on the open-hearth floor was to give you a shovel and tell you to join the gang, and say, "What the ———d———? Why you put da'mite on the roof?" Whereupon, the worker is fussed because as a worker it is important for me to have a decent standing among my friends, and every time I am balled out I lose pull with my buddies.

Thousands are working that way in the steel mills today, and in every gang it is simply as a matter of bad relations as a result of these backhanded instructions, and this is a pretty serious price to pay for school. While we can see many men going through the motions gradually learning, with such a lack of desire and interest and spirit and good will that the final result is, I think, immensely smaller than we are apt to think.

Then, of course, there is the very thing that comes into the matter of psychology, which is the main spring, in my mind, that makes the laborer do his work, just as it makes any of us do our work; that is the unwillingness of the labor gang foreman. It was not until very lately that I came into contact with the schooled worker. The feeling is in the working gang that the foreman does not want to share with his worker his position of the know-how. He wants them to remain ignorant of the real things in order to give the man under him no opportunity to rise above him in the work. Instead of saying, "Don't you see, Jack or Joe, this kind of defect in the shop gets me in wrong"—instead of doing it that way, which

would materially simplify matters, we pass as we gather around the salamander the fact that he thinks he is it, and we wonder why one defect could go through and the other could not. He could not then say, "What the H——?" The boss would say, if I asked Bill why we should do that, they would get too blamed good on the job, we will help him lose his job, and he would not have to ride us on the neck as often as he does.

The most serious factor in this whole matter of efficient production is not so much in the foreman's bad teaching and cursing as it is in the feeling that the foreman is trying to hog away the satisfaction and credit from the man who really does his work. They get the same satisfaction from a good job that Commissioner Connelley does in organizing a Safety Congress. The foreman can hog that much and many of them do enjoy it, and many of them can feel that they can fall back on the foreman in a way that in the ordinary walks of life we could never dream of.

We are too limited and can never think of all the magnificent things he holds in his head, and that helps to a stand and conviction whether we will vote or not, as a tremendous obstacle to the average man in the laboring gang. I found this throughout, from one to another, putting yourself at the disposal of the company and the foreman does not get you anywhere. If you want to get to be a foreman—in that you have to begin your plans by pull—and if you are determined to be a magnate, there is only one way. Do your diplomatic best to marry the boss' daughter. And furthermore, the surprising part is they can generally supply you with the goods.

When you ask, who is the foreman of the department, nine out of ten they will point to a man and say, "He is—he is brother-in-law of that man, and the superintendent is the son-in-law of a member of the Board of Directors." Every single foreman, from the vice-president's office in a New York city plant down, can attribute his promotion to the relations existing between himself and the man with the shovel to just this one thing. Feeling that doing your jobs do not get you anywhere, seeps far to the bottom and adds to the general distrust on the part of the worker and the employees generally, and in looking over a group of questions prepared by a man who had been interviewing about 400 workmen recently, every one of them had absolutely the same feeling: that the foreman was a traitor, and for a few cents per hour was selling out to his brother in the laboring gang.

Because of this fact, the working men realize that the only way they can get back at the foreman is to get back at the company through the foreman. If the foreman treats me badly, can I say, "This is what I think of you?" If I retain that job I must keep still to him, but I can lower the amount of my energy and I can have the unhealthy satisfaction of knowing I am hurting that foreman because he gets his standing according to the amount of work done by his gang, and the least I do the more I am lowering him, and the company is paying the price of my ill-will. I am inclined to think, as I say, that the very biggest item in that whole problem is not so much the bad teaching as the primary refusal of the foreman to share with me the satisfaction of being a good worker. One of the most simple indications is the way the average foreman is always saying, "Hey, there." That means that the foreman is unable, or unwilling, to learn the name of his men, and if he has anything to say he has to say, "Hey there," at which everybody in the place stops, may be 150 men—and they had better stop—and they have to look at the foreman, and he then says, "You there." I like a place where they call me Joe or Anthony or Lorenz, and mine could be the name of Joe at reduced speed, but even that is better than to say, "Hey there," and the working man will invariably say as soon as he turns his back, "He yells too much—he no good."

I have in mind the way a man in one Eastern city got back at the foreman. The foreman used to say to his fellows, "Why the hell do I have to tell you to do

every single thing? I have to stand right over you every minute." With that the man picked up a skid to be used on the car, and not five minutes later the same foreman looked around and yelled to one of the other fellows, "Hey there, where are you going with that skid?" "I was taking the skid over there." He said, "You wait there until I tell you, young man."

That man, I must say, was the one man, I think, in my life I ever had a down-to-the-ground-deep desire to murder. I have not had that habit but he surely aroused me some, and when I came to talk to the others one of them said, "He fired me by transferring me to another department," and that was how he fired me. Another said "If I did not have a kid, and my wife dead, I would be blanked if I would not take twenty years in the penn just for the satisfaction of knocking his head off." I went to the company, and said, "It isn't anything to me, but your foreman is likely to be murdered," and the assistant superintendent calmly said, "But that is outside of my department."

Another way in which the company is always paying for the bad results of these relationships was mastered in going down to where I worked seven months, and where I made a trip after the steel strike had started. I went up to a man, evidently an American, and I said, "You seem a good worker, what are you striking for?" He said, "I am not striking for anything, because I got twelve hours a day, but the others want to get twelve hours a day, too. It was nine years ago in this company that I went to some other boss, to the superintendent of the department, and I said, "Look here, we are working eighteen hours every Sunday, and the rest of the time on tonnage, and we can do just as well if we cut this out and work every day at tonnage." He immediately replied, "I want you to know that I am running this place, and when I want to give you a twelve-hour day I will do it, and not before." He said, "Of course, we had to go out, and it cost my family hundreds of dollars, but when they began to talk about striking, this was my chance to get even." He had carried this in his mind for nine years.

Other things could be told in addition to the loss caused by the use of no brains on the part of the laboring gang boss, but that is out of my department this morning. The economic waste due to relations between foremen and employes is causing a very serious increase in the cost of production and, therefore, cost of commerce. It is causing a considerable increase in the present unrest, because it is not taking into consideration safety for democracy, contributing to the thousands of others who cannot work it for themselves at the hands of the present foremen. But we are not going to get anywhere simply by giving out time to the balling out of the foremen, just as the foreman balls out the workmen. If we are going to have a good conscience, we must give thought to the foreman's position and see why he finds it so hard to have pleasant words, and see if we are not partly responsible.

Take, for instance, the physical conditions of a big steel plant. The very first shot out of the box, I think we increase these by means of the noise which we constantly permit, and most of us think it beneath our dignity to notice. Many employers say, "Of course, I tried to tell all the workers about the noise, but at the end of a day I was dead and done out." There are more unnecessary noises than most of us have waked up to recognize in these plants, and then the smoke and the danger.

That makes a pretty hard proposition for the foreman to come through, partly because every ounce of sweat, every grain of dirt and smoke either has to be paid for at so much per hour or it means that that particular job will get only the very lowest possible working man, and that brings the problem up to the foreman again.

One place where I asked for a job attending to a closed furnace, and the foreman said to me, "You are an American. I would not give you a job here; it is a hand-fed, closed furnace; it is so nasty and hot we hire the lousiest foreigners we can get."

New machinery. Lots of plants blame their foremen who cannot see the connection with that problem between the dirt and grease and grime, etc., that they themselves are permitting in the plant.

Then, take the matter of fatigue. It seems impossible to expect a foreman to be a decent kind of leader of men when they work there every week twelve or thirteen hours; every night with twelve or fourteen hours rest; every Sunday. It is humanely impossible for him to be a nice gentleman. Men have not got it in them to be gentlemen, and salesmen and diplomatic under those conditions. I am perfectly sure that we have no right to expect the better leadership until we begin to give them better hours, and, furthermore, I am perfectly confident that the effect those hours have upon them are tremendously economical in the relation between the foreman and his men.

One man said, "You won't see no foreman asleep at this plant, because there was a man working over this gang and we knew every hour when he went off." I will say I never yet found a man who had a foreman who did not sleep some time or other, and I still have a crow to pick with the foreman who broke up my rest. I knew where to find the gang right after twelve-thirty, because they had learned to hide themselves pretty well from the police. They used to say, "Well, we have so many billets to do tonight; we can hide the hardest until the boss comes around." In the meantime, the gang all would rendezvous, but when the policeman looked into the window, the foreman was always working—and twelve hours a day, of course.

I have in mind my last two hours on the job. The last twelve-hour training of my seven months was the busiest two hours I ever put in. The assistant foreman in the cold-rolled department of the night turn, and I, had a turn in and put in the time of the fellow who did not come in, but the turn was a little bit lessened by the fact that I knew that while I was sweating there the foreman just beneath me was taking his two hours and every night he would look at his watch at two-thirty, and we still had two hours to work. Then he would say, "My God, if we work any more tonight, boys, the day gang will have no work to do; let's hit the hay." It is useless to suppose this man can effect any leadership when these men are chronically tired out.

The only thing to make them act is the super-heated language of the foreman, because he is tired, too, and it would be perfectly silly to ask to go to shorter hours unless we can ask for different kind of leadership. If it is true that ninety-eight per cent. of the disputes raised between the foreman and the gang, I would wager that a large per cent. would be found to have arisen when they were both just dead, dog tired. The doctors tell us the one unfailing symptom is ill-humor and we must look at these conditions of work. And, I think too we have to make sure of the assignment of our functions to the foreman.

I have in mind one place where I have the greatest respect, and we were told to tell our troubles to those foremen, but the net result was just the same as if they have been nasty cusses, but they were just too hard pressed to give them the time.

We have settled all those things in our plant by giving them to our foreman. We have all those things taken care of by our foreman. I find myself asking, "Shall I take the chance of going to them, or shall I just let them settle it, or take the chance of getting in wrong?" If you went to the foreman and asked him, "What kind of place have you, Jack." He swears and cusses you out, but only when his boss is around, and then he winks at you.

I am sure that a great many of these foremen have not a proper degree of the kind the foreman and worker wanted, and that is a larger degree of making good for they are young, and a larger degree of holding the job if they are older. One chap said he was told to hang up hooks and knock them down again. His boss

saw them sitting down, and, of course, the foreman, in order to hold his job, said, "Now, boys, just go out and go through the motions." There are thousands of foremen in that position today, and are responsible gentlemen and leaders and who would make money for the boss if they could be properly placed and properly handled.

So, it seems to me, we cannot get this problem solved until we see the foreman come through with his job with a larger feeling of security and appreciation from the man higher up, and we have to sell the organization to him just as he sells the organization to the men. I have in mind the fable which represents this whole situation. The perch came to the large turtle and said, "We are not having a square deal at all, because the pike insisted on eating them up, what are you going to do?" And the turtle said, "Next week, and again—next week." Of course, you people are perch, and pike are pike, but I shall change a certain number of perch into a certain number of pike. And that is about where we are today.

The hardest job in the world is to be in a coal mine, and the meanest one all around. I asked a miner, once, why he had not gone into a steel plant, and he said, "There are one or two things. I went into a steel plant and worked in the labor gang, but the foreman was such a S. O. B. that I simply could not keep my self respect." Or he will say, as one old Scotchman did, "I have done nothing else but mine for forty-two years and its too late to change now. Ever since I was ten years old and walked six miles to work and my mother washed my face, and I knew nothing else. Well, I do not know, but you know, I never could see having one of those dern foremen around all the time."

In the case of the coal strike today; the cause is because there are more men in coal mining today; because a man does not have a foreman who rawhides him, and I am perfectly sure that the average time man, wire men, pipe layers, who are not on tonnage, but days job, it is a better days job with the foreman miles away from him than with the foreman at his elbow. Of course, it should be realized that the foreman has a right to a larger degree of security, and responsibility ought to be given him by the company. How can we have fewer foremen in order that the ones we have may grow and feel themselves leaders without having to take away from the workers under them the satisfaction of doing the work well?

In Cleveland, the function of the foreman, past, present and future is teacher, nurse, leader, and that means the leader foreman will have the chance he wants and will have a chance to come through and be the man he wants to be, even though his only expert work is with the shovel. "A willing bird flies farther than a thrown stone," and so while the theory of the man who must drive is wrong, and we have to ask this man to have greater faith in the men under them, but we have no right to ask the foremen to give that faith to us men unless we pay the price of our faith to him in a larger degree than we pay today.

I am for building up the foreman over the men and the men under the foreman. The class will not do good until the foremen have a larger opportunity and a larger security. We must also limit the authority sometimes, but some times we can do harm if we take it away and give him nothing in its place. In conclusion, the captain and the sergeant, who said to him—they were waiting for the fighting orders—"We will soon be making history." The reply was, "What you and I and the boys have to make is not history but geography."

I think we can say a better foreman is going to make better industry; bigger men as foremen and with the shovel. They all want to be better, bigger men and I am quite sure the very reason for so much of the waste is that they have become to feel that with the foreman they cannot find the chance to be the men they want to be; they can turn to vices or drink the cup that dulls their senses; they begin to feel they could not make good with the foreman, but they get the attitude, "I can drink more drinks or swear more, or I am the cleverest man with the ladies—in fact a regular guy."

It is the most serious thing in American industry this moment, and comes closer to making a tremendous cost in the worth of our man power throughout this country. So, our job is now to stand with our watches in our hands, with the determination to make better men and more efficient industry. The captain could say he was pleased with the service, and he is interested, but what you and I have to make is production, and we shall not make this until it is possible for all the men working at the hands of these foremen to feel in their jobs they have a chance to be the men they want to be, and that the foreman can feel he has larger co-operation from his company in terms of authority and responsibility and opportunity, and, in terms of security, for him to be a better man and a workman who is not ashamed to be a workman and not what he thinks he now has to be, a driver. I thank you.

MAYOR HOVERTER: The next speaker interested in the safety movement, and over twenty years with safety work and welfare activities, five years with the Industrial Commission of this town and General Manager of the National Safety Council, of Chicago, Illinois, will be Mr. C. W. Price.

SHOP LIGHTING.

By C. W. Price, General Manager, National Safety Council, Chicago, Ill.

Mr. Chairman, Ladies and Gentlemen: During the last ten years it has been my habit to keep in touch with experts in touch with light manufacturers and reflectors and to endeavor to keep myself abreast with the development of the lights, lamps and fixtures. So, this little talk is not the talk of an expert, but just ordinary talk, flexible talk with non-flexible English on the latest good practice, as the International Harvester Company found in working out efficiency standards in practical ways.

Some time ago, figures from the Travelers' Insurance Company showed that they have made an analysis of 91,000 accidents, and they found that ten per cent. of these accidents were directly caused by inadequate lighting, and that is the most convincing evidence I have been able to find on the subject of light and accidents. Another figure from John Caller, who made a study of 700 deaths which occurred in 80,000 industries, and he found there were forty-five more deaths in four winters than in four summers. That same point was brought out again.

After all, we have to get this down on a basis of something practical. Authorities differ. In one place where the lighting system was improved and changed, the total output in this textile plant was increased two per cent., and in a shoe factory, where the work was close, the total output was increased ten per cent., and to prove that this was due to better lighting, they turned the new system back to the old way and it decreased to the former. Light is the tool that increases the efficiency of every other tool there. That light tells the story.

I was also interested to know what it would cost to install an efficient lighting system. Some said one-tenth of one per cent. and others said one-half of one per cent. Let's take one-half. What does that mean to the man drawing $5 a day? It means it will cost two and one-half cents a day to furnish him adequate light so that he can work. Then, threading the Tunston filaments in those lights. They maintain almost any uniform standard efficiency. Then, eye sight. One of the most injurious things to the eye is poor lighting, and when I suggest the modern Tunston, it is applied to the model—if I said any other, it would be just using a trade name.

The older filament was made by squeezing the thread through a hole, and was rather fragile, but several years ago they developed the wire prong, and since then it has been a very strong industrial lamp, and then a few years ago they discovered they could increase the efficiency of the lamp by infusing gas into the bulb.

I can see them now slaving in the McCormick works. That lamp consumed nearly three and one-half Watts per candle power. This only consumes one candle power. Mr. Edmunds met me in Wilmington, one day, and said, "I am tremendously pleased with my lighting system. I have multiplied the lights four times and decreased the cost of lighting twenty-five per cent." This seems contradictory. It is one of the most needed and most efficient units in the market; it is a convenient unit. It is a large unit.

The development of the Tunston lamp in its present form has had more to do with the present development of shop lighting than any other form. Another very attractive thing about this is the color of light, and that is a very important element. Some of the lamps on the market are not so pleasing to the eye. This is a very pleasing light.

I spoke of the life of the light. They are ground for 1,000 hours, but we found by a series of tests that sometimes they will last 1,500 and in one test 2,200 hours. I do not know of any better. And then, in putting in a shock absorber—putting in a loop here and installing eighteen gauge wire spring are perfectly shock absorbing and eliminates any loss of life.

It is exceedingly important to buy your lamps as nearly the same voltage as your plant voltage. For instance, if your lamp is four and one-half per cent. under the voltage you are using, or should the voltage of your plant be four and one-half per cent. of the rated voltage of your lamp, that over-load will cause a decrease of 45 per cent. in the life of your lamp. On the other hand, the efficiency will be increased 15, so that it is important to have the voltage of your lamp the same as your shop, but if you make any mistake, then the voltage of your lamp might be a little higher than the voltage of your plant.

Some three years ago, a large insurance company analyzed 91,000 accident reports for the purpose of discovering the causes of these mishaps. It was found that 10 per cent. were directly traceable to inadequate lighting and in 13-8/10 per cent. the same cause was a contributory factor. The British Government recently published the report of an investigation of causes of accidents and in it we find an analysis which closely parallels the findings of the insurance company above quoted. In order to discover the relation of darkness to accidents the British investigators adopted the rather ingenious method of selecting for especial study such accidents as were caused by stumbling and falling, on the assumption that they were most often caused by the absence of proper lighting. They found, by comparing the four midwinter months with the four midsummer months, that there were 39½ per cent. more men injured by stumbling and falling in winter than in summer. This is very suggestive and indicates the importance of general illumination as a factor in safety work.

In all large corporations, where efficient safety work is being done, adequate light (both natural and artificial) is strongly emphasized as an indispensable provision. Good, general illumination is provided for all working floors, stairways, platforms and yards; in fact, for all places where men must go to perform their work.

Mr. C. L. Eschleman, in a paper published in the proceedings of the American Institute of Electrical Engineers several years ago, reported the results of an investigation of a large number of plants in which efficient lighting systems had been installed. He found that in such plants as steel mills, where the work is of a coarse nature, efficient light increased the total output two per cent. In plants, such as textile mills and shoe factories, the output was increased 10 per cent.

Authorities differ as to the cost of furnishing adequate light in a plant. Some place the cost at one-tenth of one per cent. of wages; other claim that it cost one-half of one per cent. Suppose we accept the higher figure; what does it mean? It means a total cost of one and one-half cents to furnish a $3.00-a-day man with sufficient light to do his work safely and efficiently during a nine-hour work period. If the authorities are approximately correct in their analysis of lighting cost the mere statement of their conclusions should convince any plant manager that he cannot afford to do without proper lighting facilities in his establishment.

In a recent investigation of the causes of eye fatigue, made by the Industrial Commission of Wisconsin, it was found that in a large percentage of the industries, such as shoe, clothing and textile factories, the lack of proper lighting (both natural and artificial) resulted in eye fatigue and loss of efficiency. For instance, in one knitting mill, where a girl was doing close work under improper lighting conditions, her efficiency dropped 50 per cent. every day during the hours from 2:30 to 5:30 P. M. In a neighboring factory, where the work was quite as close and exacting, but where ideal lighting conditions prevailed, a uniform standard of efficiency was maintained practically throughout the entire day.

In discussing shop lighting the first and most important item to consider is the type of lamp to be used. In visiting a number of plants in which efficient lighting systems have been installed, and through contact with practical illuminating engineers, I find the unanimous opinion to be in favor of the modern gas-filled Tungsten Lamp, as being the most convenient and efficient type of lamp on the market. Some years ago, when the Tungsten lamp was first developed, it was thought that the filament would be too fragile for practical shop use. The first filament was known as a "squirted" filament, but later one of drawn wire was developed which has proven to be substantial and durable, reaching an average life of 1,000 hours. A few years ago a gas-filled lamp was substituted for the carbon lamp, with the result that the candle power was increased 25 per cent. per watt.

The old carbon-filament lamp, which was universally used ten years ago and is still found flickering away in many plants, consumed about three and one-half watts of current per candle power; the gas-filled Tungsten lamp consumes only one watt per candle power.

Some time ago when visiting a shoe factory in Milwaukee, I was shown a wagon load of old-carbon-filament lamps with drop cords taken out just prior to the installation of an up-to-date, efficient lighting system with Tungsten lamps. The new system showed a reduction in current consumption of 25 per cent. and an increase in general illumination of 400 per cent.

The color of the light rays from a Tungsten Lamp is a very attractive feature, as it resembles sunlight and produces a most cheerful effect in a factory.

The question of glare is also receiving careful attention in all plants where the problem of lighting has been carefully studied. It is advisable to use lamps with the lower part of the bulb frosted, unless the reflector is sufficiently deep to conceal it.

Sixty-five per cent. of the light from the filament of a modern Tungsten lamp proceeds horizontally—does not go up nor down. When I first learned this fact, I appreciated, as I had not before, the importance of equipping the lamp with a dome-shaped reflector to catch all the horizontal rays of light and redirect them to the working plane. The dome reflector, besides properly redirecting the light to the working plane, conceals the lamp and practically eliminates all glare.

Two years ago I had occasion to investigate a large number of factories in Wisconsin and I found that in 90 per cent. of the plants where new lighting systems had been installed the type of reflector was so inefficient that 50 per cent. of the light was lost to the working plane. The disc type of reflector was in common use, and I recall one plant where the standard unit was a cluster of four 60-watt lamps, equipped with a disc reflector. I installed, beside one of these clusters, a 100-watt Tungsten lamp with a bowl-shaped reflector, and found by careful test that the 100-watt lamp gave as much light on the working plane as did the four 60-watt lamps. A properly designed reflector will increase the efficiency of a general illumination unit from 35 to 50 per cent.

The white porcelain steel reflector is now generally accepted as the most practical and economical type, so far as material is concerned. It is inexpensive, strong, resists fumes and moisture and is easily cleaned.

In passing, I desire to emphasize the point that where reflectors are kept clean—and this means cleaning them at least each week—efficiency is increased at least 25 per cent.

Another point, regarding the use of lamps in cluster: It has been found, after very careful tests, that where four 100-watt lamps, for instance, are arranged in a cluster the light from such lamps is 12 per cent. less than the light from one 400-watt lamp equipped with an efficient reflector. The loss is caused by the lamps on one side interfering with the passage of the light from the lamps on the other side.

Following are specifications in detail for various conditions and machines found in the average industry, the type of lamp and reflector which should be used, the amount of light required and the spacing of the units. These standards do not represent alone my individual opinion, but are the standards recommended by authorities competent to speak from practical experience:

ROOMS WITH 12 TO 10 FOOT CEILINGS—NO GAS OR SMOKE.

(a) *Type of lamp*—100-watt gas filled Tungsten.

(b) *Type of Reflector.* Dome.

(c) *Height*—10 feet (spacing not exceeding one and two-thirds times height).

(d) *Spacing*—Need not be arranged regularly. The units should be so placed as to give the best light for individual machines or benches. Care should be taken to arrange the lamps so as to avoid shadows caused by piles of material, beams, pillars, etc., as well as from workmen's body.

(In the plant of the International Harvester Co., where the above plan was adopted, about 90 per cent. of individual machine lighting was eliminated.)

(e) *Minimum Amount of Light*—One-half power per square floor foot is required to insure safety and efficiency in departments where coarse work is done; as in ordinary wood and metal working shops. In departments where closer work is required, one to two candle power per square foot of floor space is necessary.

(The above standard is equivalent to the light from a one-candle-power lamp hung at the height specified for each two feet of floor space, that is, a 100-watt lamp will illuminate 200 square feet of floor space.)

WAREHOUSES WITH LOW CEILINGS, 9 TO 11 FEET.

(a) *Type of Lamp*—60-watt Tungsten.

(b) *Type of Reflector*—Similar to design shown in Fig. Page 10.

(c) *Height*—As near ceiling as possible.

(d) *Spacing*—Arranged to give the best light for aisles.

(e) *Minimum Amount of Light*—One-fourth candle power per square foot of floor space.

FOUNDRIES.

(a) *Type of Lamp*—Units depend upon height as follows:

20	feet	200 watt.
20 to 25	feet	300 watt.
25 to 30	feet	400 watt.
30 to 35	feet	500 watt.
35 to 40	feet	750 watt.
Over 40	feet	1000 watt.

(b) *Type of Reflector*—Deep bowl, shown in Fig. 2, page 10; diameter specified according to size of lamp used.

(c) *Height*—Twenty feet (where no cranes or other obstructions interfere), otherwise depending on height of crane.

(d) *Spacing*—Arranged uniformly over room.

(e) *Minimum Amount of Light*—One candle power per square foot of floor space.

(Owing to the presence of gas and smoke, this standard is found to give about the same amount of light on the working planes as one-half candle power per square foot of floor space in ordinary departments.)

STEEL MILLS AND OTHER STRUCTURES WITH HIGH CEILINGS.

(a) *Type of Lamp*—Units depend upon height, as follows:

20	feet	200 watt.
20 to 25	feet	300 watt.
25 to 30	feet	400 watt.
30 to 35	feet	500 watt.
35 to 40	feet	750 watt.
Over 40	feet	1000 watt.

(b) *Type of Reflector*—Deep bowl, shown in Fig. 2, page 10; diameter specified according to size of lamp used.

(c) *Height*—Twenty feet (where no cranes or other overhead obstructions interfere), otherwise depending on height of crane.

(d) *Spacing*—Arranged uniformly over room.

(e) *Minimum Amount of Light*—One-half candle power per foot of floor space.

STAIRWAYS.

(a) *Type of Lamp*—Forty-watt Tungsten.

(b) *Type of Reflector*—Deep bowl, similar to Fig 3, page 10.

(c) *Height*—As high as ceiling will permit.

(d) *Location*—Top of stairway; arranged to throw the light down full length of flight.

(e) *Minimum Amount of Light*—One forty-watt lamp for each stairway.

PLATFORMS.

(a) *Type of Lamp*—60-watt Tungsten.

(b) *Type of Reflector*—Similar to Fig. 4, page 10.

(c) *Height*—Twelve feet (if possible).

(d) *Spacing*—Over center of platform, attached to overhead beams, if there are no beams, attach lamps to pipe fixtures about four feet in length.

(e) *Minimum Amount of Light*—One-fourth candle power per square foot of floor space.

YARDS.

(a) *Type of Lamp*—300-watt Tungsten.

(b) *Type of Reflector*—Flat cone, similar to Fig. 5, page 10.

(c) *Height*—Twenty feet.

(d) *Spacing*—200 foot centers.

INDIVIDUAL MACHINES.

(a) *Type of Lamp*—25-watt Tungsten.

(b) *Type of Reflector*—Similar to Figs. 3 and 6, depending upon character of machine and location of light.

(c) *Location*—Attached or hung so that a maximum of light reaches the tool; light is completely concealed from the eyes of the operator and shadows avoided. On such machines as punch and drill presses, where operators sit close to machines, the light should be centered over the space between operator and machine.

(d) *Amount of Light*—Sufficient to prevent eye strain; also to enable operator to do efficient work.

(On many machines it is advisable to install an adjustable fixture, which will enable the operator to direct the light to the exact position desired. The use of rigid fixtures reduce the breakage of lamps.)

BENCHES.

(a) *Type of Lamp*—25-watt Tungsten.
(b) *Type of Reflector*—Similar to design shown in Fig. 3, page 10.
(c) *Height*—Bottom of reflector about four feet from floor; suspension cord should be provided with an adjuster.
(d) *Location*—Eighteen inches in from front of table.
(e) *Amount of Light*—Sufficient to prevent eye strain; also to enable operator to do efficient work.

DRAFTING TABLES.

(a) *Type of Lamps*—40-watt Tungstens.
(b) *Type of Reflector*—Similar to design shown in Fig. 3, page 10.
(c) *Height*—Forty-two inches above table.
(d) *Location*—Each lamp over central portion of table; each lamp to illuminate one-half of table.
(e) *Amount of Light*—Two 40-watts for each draftsman.

NOTE. Indirect lighting is strongly recommended.

Experience proves that where the walls of a plant are kept properly whitened with either whitewash or water paint, the illuminating value of natural and artificial light is increased 20 per cent.

(Another important item in increasing the natural light of a plant is to keep the windows clean. This will increase illumination by natural light at least 25 per cent. In most plants this item is sadly neglected.)

It has been the experience in plants where adequate natural and artificial light is provided, and where the walls of the plant are kept white, that immediately the dirt and disorder is laid bare, and a general house cleaning campaign ensues, resulting in a marked increase in neatness, orderliness and cleanliness, all of which results in increased safety and efficiency.

RECAPITULATION.

A half-dozen of the more important points may be summarized as follows:

(a) The investigation made by the insurance company proved that 24 per cent. of the 91,000 accidents were caused directly or indirectly by improper lighting.
(b) Adequate lighting increases the efficiency of a plant 2 to 10 per cent. at a cost not to exceed ½ of 1 per cent. of wages.
(c) Gas-filled Tungsten Lamps are the most efficient units for general shop illumination.
(d) Dome enameled-steel reflectors are most efficient for general illumination.
(e) All lamps, especially lamps used for machine or branch lighting, should be entirely concealed by the reflectors from the eyes of the operator.
(f) Keep walls white and windows clean, thus increasing illumination 20 per cent.

COMMISSIONER CONNELLEY: I am sure we have all enjoyed the speakers of the morning and it is now time to adjourn. I should like to have you return here as near 2 o'clock as you can, as we have a very delightful program this afternoon. Some of the gentlemen on the program wish to leave the city today. We would like to start promptly at 2 o'clock.

MONDAY, MARCH 22.

AFTERNOON SESSION.

CHAIRMAN: H. W. FORSTER, INDEPENDENCE INSPECTION BUREAU, PHILADELPHIA, PA.

COMMISSIONER CONNELLEY: Ladies and Gentlemen: It is now time for our afternoon session. We were delightfully entertained by Mr. Price this morning and our session was somewhat prolonged, and we are just a little bit late this afternoon.

I have great pleasure in being able to get Mr. H. W. Forster, of Philadelphia, to act as chairman this afternoon, because I know that Mr. Forster knows just what he has done for the safety movement in America. There has never been a time in the eight years I have known him when he has faltered in any way in performing his duties, and today it is the same old story; he is here to deliver the goods, and we appreciate it more than ever this year, because it is our first meeting since the war. Mr. Forster.

MR. FORSTER: Commissioner Connelley, Ladies and Gentlemen: I had a great deal of difficulty in acknowledging and accepting this invitation to speak, in determining upon this salutation. Some of us refer to Commissioner Connelley as Doctor; some of us as Dean, remembering him in educational work in the western States. It is always safe to address him as Honorable; in Philadelphia, Esquire, so that after weighed deliberation, I say, Dean.

The presiding officer should be seen and heard as little as possible. I was particularly embarrassed as a young and ignorant engineer, once as I made a speech. I did not feel qualified to come up on the stage at that time and I told them so, and even what I would like to have said, I was too rattled to know how to say it. And ever since then I have been distinguished for not having anything to say nor knowing how to say it, if I did.

This Congress was developed in three parts, as was Gaul; three essential elements—the employer, the employee and the community. The employee and employer have a chance to work in the industrial field, home safety and industry. The program has been modifed slightly.

We will next hear from Dr. McDowell, who comes to us from the great and unique city of New York; a clergyman of the Presbyterian faith, who had his first parish right down the river at Steelton, coming home again; a preacher of the Gospel of the old-fashioned and safe kind. Dr. John McDowell, who will tell us about Safety as a Community Proposition.

SAFETY AS A COMMUNITY PROPOSITION.

BY DR. JOHN McDOWELL, NEW YORK CITY.

Mr. Chairman, Ladies and Gentlemen: The following points may be of interest: First, the character of a community is determined not by the value it puts on things, but by the value it puts on people; not by the value it puts on property, but by the value it puts on a person. The fundamental difference between the pig in civil life in Africa and America is one of the standards of value. You can measure the character of a community by the value it puts on its people. So the value of a nation.

Second, the standard of value in a community is determined by the community's view of life. There are three prevailing views today. First, the materialistic view, according to which man is just so much matter. He would bring in the market just what he weighs in terms of matter. The grave ends all, and hence when Jesus asked in His day, "How much is a man better than a sheep?," the answer of that question will be determined by the view one takes of men. If man is only matter, and if the grave ends all, then it may be doubted as to whether man is of much more value than sheep. This view, of course, is the lowest possible view one can take of life. It always results in low standards of value, and in a low and cheap civilization.

The second view is the commercial view, according to which the value of man is determined purely by the law of supply and demand. If things are scarce, and men are plentiful, things will then have more value than men. If men are scarce and things are plentiful, men will be of more value than things. This is the view which has prevailed not only in Pagan civilization, but to some extent in our so-called Christian civilization. It is the view that has led men ahead—coin above character. From this view has issued some of the results which have been detrimental not only to industrial life, but to every sphere of living.

Third, the Christian, or the human view of life, according to which life is the most sacred thing in the world and personality is of superhuman value. As this view prevails in human society man is raised to his true position and becomes the dominant standard of value. It is needless to say that no movement of modern times has done more to emphasize the necessity of the Christian view of life than the Safety Movement.

Three direct results have come to the Safety Movement. First, it has helped to raise and maintain the highest standards of value, not only in communities but throughout the nation. Second, it has increased co-operation in the communities in the interest of protection of life and the promotion of community welfare, and third, it has filled the community spirit of brotherhood, good will and a common incentive, and, fourth, it has answered the question which is rising today in every realm of life; namely, shall America be commercialized or shall it be Christianized; shall the future sympathy of America be the dollar mark or the Cross?

The safety movement is answering this question in a most real and practical way, and is saying in no uncertain voice, let the future sympathy of America be the Cross. I thank you.

MR. FORSTER: I know it must be something of a relief to the audience to be able to apply a sermon; that was a relief sermon. I have been impressed that almost every speaker strikes that same note—accident prevention is religion. Dr. McDowell has talked about the community aspect, one of the three subjects. The second to be discussed today in the co-operation of employers.

I am glad the man I have known for years can come to us today with so clean a slate. He is going to speak for the organization that has done what he advocates. All of us know that the New York Central, perhaps more than any other railroad, has done wonderful work in this direction. Mr. Dow has talked the gospel from one end of the line to the other, believing that in co-operation we secure safety. Mr. Dow is not only an excellent layman minister, but a scenario writer. He wrote, "The House That Jack Built," and others. I am pleased to present to you Mr. Marcus A. Dow, Director of Safety of the New York Central Railroad, who will talk to us on the subject of Securing the Co-operation of the Employer in Safety. Mr. Dow.

SECURING THE CO-OPERATION OF THE EMPLOYER IN SAFETY.

BY MARCUS A DOW, DIRECTOR OF SAFETY, NEW YORK CENTRAL LINES.

Mr. Chairman, Ladies and Gentlemen: I was asked a few minutes ago what I was going to say, and I said "the less the better." I knew Mr. Forster of old, and you can depend on it when he wants you to do anything it is up to you to do it, and no need to argue. However, it was a great pleasure for me to be here this afternoon to hear them discuss the matter of securing the co-operation of the employer in safety.

About three years ago, at Cleveland, the Central Western headquarters of the New York Central, we started a new thing in our safety work. We called together a conference of about 150 officials of that railroad, and spent an entire day very much in the same manner as you have spent here, from the vice-president to the section foreman in that particular district. Papers were assigned on various phases of the safety work, and were read and discussed by those present, and the keynote of each paper read at that meeting was on the question of service to humanity. And so it seems to me that after all is said and done that the one spot in the employer's heart you can reach and obtain immediate response is on the question of service to humanity.

Of course, there is the consideration of financial gain which probably is the first thing an employer will consider when you approach him to sell him this safety idea. There has been so much said on that phase that I will not discuss it.

Any one who desires to secure the co-operation of the employer ought to go to the National Safety Council and obtain the records of hundreds that do business in dollars and cents. Records of accident prevention covering a brief space of time may not convince him, but the record of the one railroad covering several years time shows conclusively the great amount of good that can be accomplished by the industries of the country for their employer with co-operation to the fullest extent.

The Safety Bureau was organized in 1912. We hardly got in good working order before the middle of 1913, and that year shows the highest accident record of the company since the beginning. Then it declined, and it has never gone back and though I believe the systematic safety work carried on there has been since 1913 an average decrease of 25 per cent. in fatalities and an average of 25 per cent. of non fatal or unpreventable accidents and during that period this railroad has saved 377 from fatal injury and 10,532 from serious non-fatal injury.

The United States Steel Corporation stands out like a beacon light to dispel every vestige of doubt about a well-organized company. We are told that during ten years they have spent millions of dollars for engineering and safety devices and from their safety work they have so reduced their casualties they have saved thousands of lives and $1,500,000 besides, and with that statement I shall say nothing further as to the financial inducement to an employer in securing his co-operation in safety work.

There are other inducements of a similar character which can be presented. For instance, it has been proven that safety work has increased efficiency. Take a large railroad where a great amount of tonnage is handled every day, and suppose a brakeman or conductor is run over and loses his life. It stands to reason the work will be demoralized for days and weeks after.

Preventing an accident maintains efficiency, but I should like to talk to you a few moments on the other phase of this work, which can be presented to the average American employer in order to obtain the fullest kind of co-operation every time in safety work. I think the keynote has really been struck by Dr. McDowell when he spoke of the raising of the standard of value in human life. I believe that the average American employer who has a heart, a keen imagination, will absorb the thought of service to mankind and the state and to the nation, and by absorbing that thought will render a service for safety far more than the employer who looks at it from the view point of saving dollars. And, so, I think the first step in interesting an employer, aside from financial gain, is in showing him the great privilege of serving his fellow men and country by preventing accidents.

If you, Mr. American Employer, should stand by the bank of a river and see another human being fall into the water and hear an agonizing cry, and at once, before you knew it, you had your coat off and you were in the water, and after a hard desperate struggle you succeeded in bringing an unconscious form to shore, and you laid it on the bank, and you saw it breathe, you would thank God for the privilege of saving that life. And you could not help from having the feeling of justified pride that you had done something worth while, and answered the call of humanity, and in the test you had measured up to the fullest requirements of a real man.

It makes no difference whether it is a drowning man taken from the water just in time to save him or whether, in a less spectacular way, through practical ways, he is kept from the wheels of a locomotive or ground to pieces in a machine, the result is just the same. It is a life saved. And it is because there are hundreds of employers in this country who have responded to the call of humanity that many lives have been saved, and every prevention means that lives had been saved just as if they had been drowning. Don't you see, my friends, that if the idea of safety is intelligently and completely sold to the employer he will view the thing from a bigger and higher standpoint than the mere saving of dollars and cents and he will render a better service for it?

In other words, can't you see that safety service, no matter on whose part, is a service of the heart, a service which calls for that spontaneous, ever ready, never-let-up, determined effort that you would put in the saving of the life that you would have lost without your best efforts?

After the employer has been made to see the importance of his responsibility for safety work, the thing of first importance, of course, is for that employer to begin engineering revision in his plant to such an extent that it will put the plant in a reasonably safe condition for the men to work in. It must be safe from the standpoint of light and ventilation and all of these allied principles. But the employer should also be made to clearly understand that engineering represents, or constitutes, only a part of the duties to be performed if he is to get the best results.

You often hear it said that the majority of unpreventable cases are due to carelessness of the parties involved. That is not always true. At least all accidents due to carelessness are not to the one operating. It may have been with the one who hired him or trained him and did not point out to him the unsafe things he was not to do. or, maybe, the ones around him whose careless ways he followed. And, so it seems to me that a better statement is that a great majority could be prevented when all of the officers co-operated in the task of creating an atmosphere of safety and carelessness and as I have said. That must begin with the attitude of the employer himself on the subject of safety.

Eternal vigor is the price of safety. The man in charge must extend his vigor so far that the men under him are able to do their work safely and are carefully supervised so that they do it in the safe and proper way only. Probably some of you have heard Robin Hood, where he comes out and sings, "The sword is a weapon to conquer fate, I honor the man who wields it." And he then adds the comparison to the one who makes it. We look to the men to construct devices, but how much more important is the duty of the man in charge to make it safe, and to place in the hearts of the men these weapons of knowledge and determination with which these unsafe habits may be overcome—this leadership on the part of the employer which will extend down through his superintendent, and foreman, and from them to the man under him, then that will get real tangible results.

From the beginning of history, human beings have been following a leader. Good leadership is the success of everything. Likewise, poor leadership means untold hardships and misery, and so the employer must be a good leader, and the spirit of safety must extend from his heart out into the plant, and into the hearts of their superintendents.

I think that lest we forget, there is a message that we can take from the work of our gallant boys who went to France and fought so nobly and unselfishly there in the interest of safety to humanity. If you will pardon me a moment, I would like to take you to those dark days in July, two years ago, when the Germans pressed on by sheer want, and the Allies were all in full retreat, all in a heart-broken way, when the heart of the civilized world cried out that something should happen, and you remember how the Americans went in and drove all the Germans back and finally a war was won for the cause of safety and humanity.

After that first fierce rush was over at Chateau Thierry, and the ambulance men were searching the field, they came across an American boy, still in death. He had made the supreme sacrifice for the cause of humanity, and in the pocket of that coat they found a note, in his own writing, this sublime pledge: "I shall enter this field cheerfully and will do my utmost, as if the entire issue of the conflict rested on me alone." That is the spirit that won the war.

That is the same spirit we are working for, to make our industrial world a safe place. Are you willing to enter upon this safety movement with the same thought and determination, and the same splendid devotion to an ideal as that young American soldier, who gave his all, and do your utmost as if the entire success, as if the entire work depended upon it?

Accident prevention work has passed the stage of the crucial moment. It has proven a practical, workable plan concerning man-power and eliminating accidents, and to the American employer I would say that it is today a thing of vital necessity in our economy, in our industry and in our civil life. I would say to the American employer today that safety work is an entirely necessary thing in our natural life. It is a thing which every employer of labor must get behind and support, because of all the faults and short-comings that we as a nation can be accused of, there can be none so inexcusable as a lack of effort to stop all unnecessary wastage of human life.

Never has there been a shortage of men power there is today. Never before has there been a greater need of conservation of the lives of the skilled men in our industries. The prevention today of one single accident in these perilous times when the great human wastage of the world war has turned the wheels of the American employer who conscientiously tries to prevent accidents in his plant, that employer renders to his country, the finest country in the world, a great and glorious service.

The co-operation of the employer in accident prevention is needed today in a broader sense than merely installing safety devices in public places. It is needed in the influence which he can bring in the teaching of self preservation in public schools. It is needed in the automobile clubs in bringing people to know their

short-comings, and the railroad crossings where 2,000 and more a year are killed; his influence is needed in his own plant, in bringing to the attention of his own workers the vast sacrifices of life and limb due to men trespassing on the railroad, which is worse than ever before, 5,000 human beings every year, or more than 51 per cent. of all fatalities occur on the railroads.

Co-operation is needed in a broader sense than carrying it on in his own plant if we are to get the fullest benefits to procure their safety work. That is the kind that is necessary. The employer must understand, and it is up to you safety men to carry this idea to the employer, that Safety First are simply two words that stand for the principle and if the employer believes in that principle; that he also believes it is better to be careful than crippled; than to leave a widow and orphans, then he must come to the support of that principle, not only by establishing safety in his plant, but by lending his co-operation in every safety movement started in the community, thereby serving not only the community but the State at large. And I believe the employer of this kind is going to be measured in higher and better things than merely dollars.

A noted clergyman was asked the most effective thing in his war work in France, and he replied, "The air squad." The battle planes had gone out as usual that morning and after finishing their work they returned to their aviation field—all but one. As the day wore on and he did not return, the word was soon passed in whispers and some one spoke up that he had not seen Guy Neemer—that he had not come back, although France had suffered for weeks and months, the shock went like a knife into their hearts. He had gone forth once more to battle and he had not come back.

My friends, mark the fate of Guy Neemer, and in the fields of Flanders lie the heroes of America—more than 7,000. Not fliers all, but soldiers of freedom, and they never will come back. But it has been said, and I believe it is true, that the blood that has been shed, and the horror that has been endured has awakened a new spirit in the hearts of America, and henceforth more thought will be given the higher things, and less to material things, and I believe the success of the employer in safety work will be measured not only in dollars, but in all that is put in life; in the happiness of the home; through the happiness of his fellow men; his willingness to serve, and to put forth his best efforts in this work, and to save men. To you representatives of the Industrial Committee, and to the National Safety Council, I will say that this safety movement is a great progressive and forward movement to which there can be no retreat.

In the great battle of Argonne, one lad was shot down and wounded. His first lieutenant went to him to take down his dying words. Lifting his head he said, "Lieutenant, the command is forward." And with that, his head sank back and he was dead.

Employers of American industrial workers, men of America, the command is "forward." Forward for country, for logic, for right and for justice and for safety. Let us all take heed and remember the command is "forward." Thank you.

MR. FORSTER: It certainly is a comfort to the chairman to have speakers make so good. This beautiful spring day on Capitol Hill has brought out the very best that was in Mr. Dow. And, now, the next on our program, after hearing from a preacher, and from a man who came from this State, and from the engineering plant, we have Mr. F. L. Hurlbutt, from the E. I. du Pont de Nemours & Company, on, "Securing the Co-operation of the Employe in Safety." This company represents a group of friends interested in the working man, and instead of guarding against dangers, has been working for 13 years with ever increasing success toward securing safety for their employees. The result has been that the business is by no means as hazardous as might be expected. I take great pleasure in presenting to you Mr. Hurlbutt.

SECURING THE CO-OPERATION OF THE EMPLOYEE IN SAFETY.

BY F. L. HURLBUTT, E. I. DU PONT DE NEMOURS & COMPANY.

From the remarks of the preceding speaker I think it is clearly evident to you that the problem of securing the co-operation of the employer in safety is primarily a sales proposition. The problem of securing the co-operation of the employee in safety is quite a similar one, but has as its basis of attack, education and propaganda.

I have always subscribed to the idea that the gaining of the co-operation of both employer and employee in safety is a sales proposition, the sole difference being that in the case of the latter you are asking them to carry on the work of safety themselves, whereas in the case of an employer you are asking primarily for his moral support and funds with which to wage your campaign.

From necessity, the employer cannot go into the details of the safety work in his establishment, nor is it necessary that he should do so. But in the case of the employee, we can expect some attention to details, and he must be made interested in the details if he is to become an active co-worker with you in this humanitarian enterprise. By the term "employee," I have chosen to include all those members of the working force who are on a payroll, from foreman and assistant foreman, straw bosses, etc., down to the rank and file of the workers, in distinction to the staff organization.

What is co-operation? The fundamental principle upon which co-operation rests is to secure the interest of those whose co-operation is desired by giving them a definite part of the work to do. This principle is not new, but on the contrary has been employed in all forms of activity, from politics to religion, yet it is just as applicable today in the safety movement as in any other field.

At the very outset, you must realize that there are two distinct branches of safety work—mechanical and educational. Much has been written and said about the relative values of engineering revision, by which is meant the mechanical side of safety, such as structural changes, changes in machine design and lay-out, mechanical guarding, and the like, in distinction to supervision, which, in its broadest sense, entails educational effort. The result of this discussion has been to show that both methods of attack are fundamentally necessary and that neither "is sufficient unto itself." Engineering revision more definitely concerns the employer, except in the detailed application by which the interest of the employee is aroused, whereas supervision lays stress upon furthering safety through education.

In the du Pont Company, with which I am connected, we have gone on the assumption that the essence of permanency in safety work lies in carrying it down through the organization. It must be considered as a definite factor in production in exactly the same manner as quality and quantity are considered and must be stressed by the organization just as frequently and just as forcibly as are these other two features.

So often we see safety carried on as a separate and distinct activity, entirely apart from the production organization duties, by a safety engineer or a safety department, which, as a consequence, stands in the eyes of the workers as a sort of side-show outside of the main tent. It is largely due to this method of carrying on the work that in many instances foremen and workmen have been led to believe that the safety movement is a frill and not a matter taken seriously by the em-

ployer. If safety is to be carried on by the production organization and not by the safety department alone, it means that the manager must take a definite stand before his staff and show these men that he expects his product to be manufactured with the minimum of accidents and that he will hold them strictly responsible for this phase of production. As a consequence of this expressed policy of the chief official, the organization will take its cue and from the assistant manager down to the rank and file worker, each man will know that he must account to the man higher up for accidents occuring in his division.

For the purpose of this talk, however, I must assume that the manager and his staff are sold on the safety proposition, but I do want to lay stress on the necessity for linking safety work inseparably with production through the production organization, as this attitude of the company is bound to be reflected in the attitude of the individual workers toward safety. This brings us to the application of the management's policy with respect to the employee.

By the time this stage has been reached the management must have committed itself to a policy of wanting to install good safeguards, and to improve working conditions generally. Either it must have made a good start in this direction or must be ready to do so when it asks for co-operation. Right here let me emphasize the importance of this point. If you are not ready to carry out such a program, which is only your share in the campaign, don't for one minute expect to win the men's support.

Remember this—the workman of today is a shrewd thinker, and the employer has made him so by offering him for his consideration such schemes as employees' representation and shop committees, which affect his most vital interests, including hours of service, rates of pay, profit sharing, etc. You have not fooled him with any jokers in these schemes, so if your program for reducing accidents doesn't ring just as true in his eyes as did your employees' representation or shop committee plan, he will spot it in an instant and your time and effort spent on him will be given the laugh.

There is no gain saying the statement that the foreman is the "king pin" in accident prevention work. This has been proven and is accepted today by every company that has succeeded in effecting permanent accident reduction. Win the foreman and the battle is two-thirds won, but to win the foreman the management must show absolute sincerity of purpose.

If you will agree with this and with the theory that the interest of any man, essential to gaining his co-operation, must be secured by having him participate himself, we come logically to the use of our "king pin," the foreman, on safety committees. The size of such committees, their tenure of office, and the areas that they must cover, are details which vary with local conditions. There can be no hard and fast rules set up as the best. If, however, you start out with these committees composed of foreman, later on, when all your foremen have served on committees, you will do well to gradually take on men from the rank and file.

The obvious function of such committees will be to make plant inspections, followed by the submission of written reports recommending guarding of dangerous machinery, the elimination of unsafe practices, and the betterment of working areas. These reports will then be taken up by the committee with the proper person in authority.

It is right at this stage of the game that you win or lose the co-operation of your committee members accordingly as you show absolute frankness in meeting their suggestions or in trying to get around them by bluffing. If the manager finds that he is continually forced to get around a committee by endeavoring to bluff them, it is simply an indication that he is not yet ready to enlist the co-operation of his men and he had better cease this form of activity until such time as he is prepared to meet them in an honest endeavor to secure safety.

The inspection work done by these committees serves a two-fold purpose. Not only does it bring to light a large number of hazards and result in recommendations for corrective measures, but still more important, from the employer's point of view, is the fact that it convinces the men serving on these committees that the employer alone cannot prevent the *majority* of accidents. He must have the active co-operation of the men. Having learned this fundamental fact through their service on safety committees these men make good missionaries among the rank and file, whose efforts toward production and safety they must direct. Again, if you have met the recommendations of the committeemen with constructive criticism and then seen that the suggestions were carried out, you have placed these committeemen in a position to vouch to their fellow-workers for your sincerity of purpose.

In connection with foremen's safety committees, a safety engineer can be of the greatest benefit provided his relationship to the committees is of the right sort. This relationship should always be of an advisory and stimulating nature and at the meetings he should keep himself in the background as much as possible. He should, by all means, overcome the tendency so many of us have of trying to think for the committee. The greatest assistance which the safety engineer or a committee chairman can render to the committee is in steering its activities along the right paths and not allowing it to come into disfavor with the management because of the nature of its recommendations. Let me assure you that you need have no fear on this score if your safety engineer is alive to his opportunities in connection with the committee work, or if you have made a proper selection in the chairman of the committee.

But the greatest value to be obtained from foremen's safety committees is gained when they are used in conjunction with regularly organized foremen's safety meetings held at stated intervals. If such meetings are undertaken the reports of the foremen's safety committee can be brought directly before the meeting and thrashed out before they go to the plant officials, with the result that practically all recommendations which do eventually come to these officials are so worth while that they can be carried out.

In the development of foremen's safety meetings, the cardinal idea is to make the men feel that the meetings are their own. They should elect their own chairman who should run the meeting and there should be no necessity of supervision by the plant officials. Here, again, the safety engineer should function in an advisory and stimulating capacity. Of course, such meetings require time and that should be the company's time. An hour once a week or once in two weeks, depending upon the size of the plant, is sufficient. At this some employers may balk, but remember, gentlemen, that if you are sincere in your purpose to have safety, you must expect to pay for it. None of the successful results of your operations have been secured without cost. Why, therefore, should you expect to secure safety without some expenditure? To show how such meetings can be used to advantage let me cite an example.

In our own company the managements of two plants decided that there should be formulated safety rules for various buildings and processes. It was recommended to the managements that they institute foremen's safety meetings which after a short time should take up the formulation of these rules. Think of the advantage to be gained by having such a meeting of the very men who must enforce the rules to work them up.

In the first plant, after the potential hazards had been discussed and past injury experience brought forward as a guide, the foremen worked up rules in about a week or so which were passed on to the next in authority, in our case the supervisor, for his criticism. This individual took the rules and changed them to suit his own ideas and needs and in turn passed them on to a rules committee. This

latter body made still further changes and additions and passed the rules on to the manager for his approval. The management, after some changes, approved them and returned them to the foremen, with the advice that they were satisfactory and should be enforced. It took the foremen about one minute to see that these rules had been completely changed. They realized that they had not been consulted about the changes nor given any reasons for the changes. The rules were no longer their rules. Their interest in them had been lost and as a consequence the plant had lost what it set out to get—their co-operation in seeing them enforced.

In the second plant, the foremen devoted a number of their meetings exclusively to the details of all the rules and thrashed out every point with great care, but in this plant the manager was shrewd enough to keep informed of what the foremen's meetings were doing with the rules by consulting the safety engineer who sat in the meetings in an advisory capacity, in order that when the men had completed the rules they could be brought directly to him, and he in turn could approve them with practically no changes.

In short, he was sufficiently interested to see that the foremen did develop the rules properly themselves so that he could return their suggestions to them for enforcement practically as they had submitted them to him. What was the answer? In the first plant the rules died a natural death, while in the second plant they were enforced, because the men were interested and felt a responsibility in seeing their own rules enforced. Foremen's safety meetings only become of value when you give the foremen a concrete piece of work to do.

Now a word as to the attitude of the foreman toward his men. Some foremen of the old school still take the attitude, "I got my experience by hard knocks, no one ever told me how to do things and my men can get theirs the same way." That's not an exaggeration, unfortunately. I have heard foremen get on their feet in the safety meetings held by the Delaware Local Safety Council and make that statement. Such foremen will never get the co-operation of their men either in their work or in safety. You must educate such foremen. Show them the necessity for training the new man. They should acquaint him with the proper method of operating his machine, with the hazards attendant upon its operation, see that he reads the safety rules and lastly show him the whyfore of what he is to do.

If a new man is shown what part his particular operation plays in the general out put of the shop he is far more likely to take a real interest in his work. It is the foremen's duty to do this, and even to go a step further and introduce him to some of his fellow-workers so he won't feel like a convict being gaped at by the other man. In short, try to make him feel at home. If a foreman will put a new man in the proper frame of mind the man will be susceptible instead of hostile to instructions and advice.

Competition between various units of an organization is always a good means of securing the employees' interest in accident reduction. Give the competition plenty of publicity so that the men will talk safety among themselves. Use your accident records in such a way that you have an equitable basis for comparison of records between the areas. Such competition awakens a sense of personal pride in the men whereby they feel that they are directly responsible for the success or failure of their department's record in the campaign.

Good bulletins, photographs and even cartoons are indispensible aids in keeping your campaign going, but they require thought and attention if they are to be beneficial. Post fewer bulletins at a time and change them oftener is the best policy. Don't keep the same material on your boards for two weeks at a time. If a man goes to a bulletin board three or four times and finds the same material there each time, he will stop coming to the board entirely.

Safety rallies and smokers at which moving pictures pertaining to safety are shown and talks on safety are given by good, live speakers are excellent means of varying the safety program. But their value is transitory and one must not depend entirely on such methods for securing the men's co-operation.

Up to this point, I have endeavored to show you the means of securing the co-operation of the employee in safety in manufacturing industries, but I should feel remiss if I did not take the advantage of this opportunity to speak for a few minutes upon the splendid opportunity there is of carrying out similar campaigns and obtaining equally good results in the construction industry. Many still believe that the inherent dangers in construction work will not yield to accident prevention treatment—that in building tall structures the loss of a man per floor must be expected. Nothing is more fallacious. I am convinced from my own experience that a large part of the construction people's problem in accident prevention work lies in the very fact that they believe their problem to be absolutely different from that of the operating man; that they must have accidents. In short, they are still hampered by an inherent idea—a sort of fatalistic attitude—similar to that prevailing in the manufacturing industry twelve years ago.

When this idea is obliterated and the construction industry is considered both by those actively in it and others outside of it in the same light that other industries are today, right then will accident prevention work make headway in the construction field, and why shouldn't it be so? Accidents are accidents regardless of the field in which they occur. Definite organizations control the workmen in both branches, thereby giving you the same opportunity for prosecuting accident prevention. Furthermore, you may be surprised to learn that the nature or classification of the majority of construction injuries is very similar to those occurring in manufacturing operations.

For the past four years, the du Pont Company has been extensively engaged in construction work and has carried on safety in this field just as extensively as it has in its field of operations. By this I mean that we have applied in general the same method of attack in securing the co-operation of the foremen and the rank and file workers. On our larger construction projects we have a safety engineer stationed in the field and hospital with complete medical service, in order that we may catch immediately those minor injuries so fraught with dangerous consequences if not given attention at once.

On the majority of our construction projects, we have instituted foremen's safety meetings, presided over by a foreman and run entirely by the foreman, and have supplemented these foremen's meetings with a safety committee of the foremen, which sometimes included members of the rank and file workers in exactly the same manner that we have done on our operating plants.

In spite of all that has been said relative to the inherent hazards of construction, I want to tell you that from our experience during the past four years in accident prevention in this field, which has covered a great variety of work, we have reached the point today where our injury records for the construction branch of our company are as low as those of our operations branch. Frankly, at first we were surprised at these results ourselves but when they continued to come in for a considerable period of time, we reached the conclusion that an attempt to secure the co-operation of the workmen in the construction field was just as faithful, if not more so, than the field of operations.

In concluding my talk, let me state the conclusions which we have reached as a result of our varied safety program which has embraced on a large number of plants during the past four years practically every recognized method of attack. You do not effect permanent accident reduction by simply talking safety and everlastingly pouring safety into men's ears. You only gain the desired results

when you have sufficiently interested your workers by giving them an actual share of the work to do.

MR. FORSTER: Your thought that we should all do something concrete seemed to strike a key note. Who will come next? A spontaneous talk always seems so much more from the heart than the man who has a chance to prepare himself. I wish Mr. Hurlbutt would give us just a few minutes' description of the du Pont methods of taking care of their great big plant near Nashville, and their attitude was quite unusual, and about their educational aspect. What were the facts, Mr. Hurlbutt? Would you mind telling us?

MR. HURLBUTT: Mr. Forster has a little over-stated that we instruct in educational safety. We do not. We do a great deal in educational safety, but we endeavor to handle the educational job just as we do all the constructive projects. We did not wait until the plant was completed. The du Pont Company has constructed and designed its plants along safety lines, and in Wilmington, where our engineering department had headquarters, we had two men detailed to the job right straight through from the time they left the drawing board until they hit the fields. We tried to embody into that everything that we possibly could in the way of plant layout, proper equipment and machinery designs and sample record with adequate notations on the drawings so that du Pont standards should be followed in the field.

They went into the field in pretty fair shape, and after plans were completed, so far as installation of machinery was concerned, we went right ahead with our project for mechanical guard. We had a conference with people who made a specialty of things for installing the guard. Up until the time the armistice was signed we had installed 3,000 guards at the approximate cost of $12,000 dollars, which would have been installed if the plant had been completed. All during construction we had a safety organization.

Our engineer had had considerable experience at Carney Point. He started the organization at Nashville, and with three safety engineers and clerical help and encouraged investigating in order that the records might be complete as they advanced. From the outset, we conferred with the construction department to organize foremen's meetings in just the same manner as I brought out in my talk. We had the engineering staff brought before the foremen and each division had their meetings and they in turn had meetings of foremen, and sub-foremen, at which the company's plans were laid out and the attitude was made plain at these meetings. The meetings were held approximately every two or three weeks and each body of foremen was brought together. At the first meeting it was the division engineer who took charge of the meeting.

We wanted them to know that we expected them and their workers to carry out the safety work, but at every meeting a member was in attendance in order that he could give experience of accidents, etc., since the last meeting. Following the construction department work, when a portion of the plant was turned over to the operating department for manufacturing, we went about it in practically the same way, holding the foremen's meetings which we have always felt was essential in our safety work.

QUESTION: What was your percentage of time lost on that construction work, by accident?

MR. HURLBUTT: I do not know. I remember, Mr. McCoy, that their record was from one-seventh to one-eighth of what could have been expected from the good old days; a very small percentage. I personally find that during the war we were put to the most severe test. I have in mind personal experiences

with high explosives. In one instance ten men were called together, to confer about a building, and they got up a rough pencil sketch; no design of building, but the building to be considered by this executive group of ten, in which I am a member, was the hospital.

Before we had a man on the job, we were laying out a completely modern hospital, with X-ray and everything. Here we were in war and we needed high explosives and the word was speed, and we designed a hospital, and the next thing was a bunk house in which the men might sleep, and better ventilation and facilities for washing and many other things, and thinking of the man first and particularly, because we knew that in that way the construction would go right ahead at a very gratifying rate, and it did.

I notice that where accident prevention was not worked in the design and the actual construction it takes one man killed on each floor per building. You remember the Woolworth building was built with the loss of only one or two men. The Government knowing war conditions, turned to the National Safety Council, formerly The American Museum of Safety, and said, "We want to secure safety." And, for the first time, with war on our hands, we put accident prevention in the Navy Yard and everywhere else, and we got results. It had been proven sufficient for the Government to feel that now is the time if ever, and it was put in and stayed in, and I personally feel that the seal of approval forever has been put on accident prevention, and the same thing holds true to accident prevention in the home.

MR. FORSTER: I wonder if he could give us any idea of the accidents that were reduced in those plants in construction, and if they were due to mechanical contrivances, and if they were due to safety education and by talking to the men and conducting meetings.

MR. HURLBUTT: If you will refer to my talk, that was practically a construction job. What I told you I considered more on the construction side of it. In that case it was primarily a case of education to teach the men their own safety. Afterwards it was the same case of mechanical means being installed. That is a badly disputed point. If I said it was 15 per cent. I might be contradicted by a man who said 20 or perhaps only 10 per cent. I am inclined to think it is 10 to 20 per cent. on any plant.

DR. JOHN McDOWELL: Mr. Chairman, may I please say just one word about an interpretation of this little book that guides my life. I stood there, today, before some of the inventions and safety devices, and opened this at the fourth chapter of Saint Mark, where the Master after a hard day's work, and they took him on board a ship to cross the Sea of Galilee, and He went to sleep and while He was asleep a great storm arose and threatened to engulf the little ship, and the men all became frightened, and one went over and said to Jesus, "Carest Thou not that we perish?" And you remember, He arose and said to the storm threatening Galilee, "Peace, be still." I read these words today in your exhibit room to myself, and I said to myself, here I find the answer. "Carest Thou not if we perish."

The safety movement has answered "Yes, we care." Thank God, you have cared. Strong men and strong women have asked that same question in every sphere of industry, and the answer has come back from the safety movement "Yes, we care." It comes very, very real in life. I want you men to see back of all that you do, this great truth that you are not only making real in every community the spirit of brotherhood, but you are making mighty real to men and women and little children the Father of God.

Men are coming to see that God cares for them, and that is the community proposition, and when that prevails throughout the whole world, we shall have a new world. For centuries there was no answer to this question. The Government did not care as long as they got the productiou. Uufortunately religion did not care as loug as their proposition was promoted. Educatiou to some extent was oblivious. It was then in the terms of the abstrart, not the concrete. But is has all changed now. In response to the call of the frightened disciple, and the men and women and children today, "Carest Thou not if we perish?" the Government is saying, education is saying, industry is saying today, and you are leading all, aud religion is saying it today in a very unuch more real way than ever before.

Some of you remember that story about the old king who coutemplated takiug a journey into a far country, and he called in his son and his servant and said, "Here is my boy—here is his change of clothes. I want you to take care of him and his clothes while I am away." He stayed away a long time and then came back, and the servants brought iu the clothing of the boy and laid it all before the king. The king said, "Where is my son?" The servant said iu grief, "Oh king, I have lost your boy, your son; but I have saved his clothes." Meu and women today let it be our business to save the boy, to save the girl, the mau, the woman, no matter what becomes of their clothes. I thank you.

C. E. SANKEY, NATIONAL TUBE CO.: The Travelers Insurauce Company have looked our place over. aud their report shows that there is not one who is in danger of an accideut there. Then, why not thiuk of these poor fellows who are exposed to danger as well as these advanced young men of the State. Let every one of us here determine, and say to ourselves, "I will do something for humanity." Then you are going to gaiu that point. Let me tell you men that each and everyone of you can take it home with you.

One day I was out with a gang of men and they were foreigners, and I was boss. We were all sitting around talking and in that talk I said to those men, who did not understand the English lauguage, "Do you believe iu the Lord?" They did not kuow what I meant, but after au explanation I said, "Do you believe in Jesus Christ?" Aud they said, "Yes, we believe just as you do." I said, "Do you know you might get hurt there?" And he said, "Yes, but the Lord will take care of me." I want you to resolve, "I will do something to lift those fellows up," and take with you that humanity that we are working for, aud you will inspire it iuto the men earniug the money and will show them that you are working for them and with them and the flag.

MR. FORSTER: We have certainly hit the bull's eye three times, aud I am surely delighted. The rest of the afternoon we want to devote to a discussion of the three subjects presented. I think it is quite impossible to discuss Dr. McDowell's, but the other two speakers are ready to discuss specific questious with you. Please give your name and eonnection so that the steuographer can get specific facts for the minutes. There is always a certain hesitaucy, but I hope you gentlemen here will speak right up. It certaiuly is bully that iu Harrisburg we have the best railroad yard iu the whole system.

C. H. POLLS: I just came in on the last speaker. I did not hear anything before this, but I want to say that there is still another way to get after the employers aud take interest in the matter if somebody will be big enough to do it. In my opinion, it takes someone to make effort if you want to make a success of the safety movement. I make the effort of going into labor orgauizations, urging the movement wherever I see something that does not concern my own organization, I go to a place where it does concern it and take an active part in the movement. Our organizations are backing up the movement and I can see no reason why we

should not all co-operate. Every labor organization should take up the safety movement. You can get men to say things that they only say to the bosses. I think and know that it is up to the man, no matter what position he is in to use his efforts. It does not take much of your time and the time it does take is very well spent.

MR. FORSTER. In Massachusetts in a power plant there were from 150 to 200 accidents from nails; packing boxes with nails, etc., and on this job three accidents were reported in the last year, and I said, "Mr. Sullivan how do you do it?" He said, "I take the carpenter aside and say, 'Now Bill, the projecting nails on this job are up to you, and if you cannot swing the job, I will give you some help.'" For several days he was busy pulling out nails and then he put it up to the fellow producing these projecting nails.

He was an Irishman and he had the language, and he knew how to get results from other people, and Mr. Sankey was right when he said we must get next to the fellow doing the work and make him do it. We cannot ourselves pull out all the nails. We cannot watch every lad or green girl. We have to impress the importance of doing a thing well on the fellow who does it. When they see the wisdom of it and whatever their job is they are glad to get at it with a spirit.

That job at Hickory was wonderful, and was a job of stupendous size. Mr. Hurlbutt knows all the records were cut and it did not impress him, but one of the fundamental things of safety is good housekeeping. "My God," one man said, "eleven beans, and good housekeeping. I have been on many construction jobs where they say we cannot keep this place clean." Don't you know it is less work to keep a place clean all the time than to allow things to go and go until you have to turn the whole gang into cleaning up to get it straight again?

I remember, in Illinois, the management ordered the Street Railway Company to take off a street cleaner who was earning $12 a week—too much money. I got there on Friday, and looked over the power house, and it was a sight. Disreputable—looked like Sam Hill. "Well," the foreman said, "if only you had come tomorrow instead of today, because by tomorrow we would have been all clean—for Saturday we clean up the place. Because they had turned off the cleaner they had to stop the whole gang to clean up, and we figured the pay roll and it cost $14 worth of labor when we could have it done beautifully with the $12 man keeping everlastingly at it. We made a report on the subject and it went back to the Illinois plant who put back the cleaner and the plant was properly kept clean, again.

On the construction job, where we produce debris, and if you get the men who are producing it and organize to keep it put in order, you will have a clean job. It is perfectly remarkable to see how simple are the fundamental ideas of safety. I have been impressed for the last few years, since I have been preaching accident prevention, with the simplicity of it. Once a man is ossified you can put this up to him, and that is why many organizations have cut their accident records at 25 per cent. down and down and down. We have not struck the mechanic yet.

The United States Steel Company has gotten nearer to the extreme minimum than any other. The Evansville work has been half preacher and half safety and erring on the side of being a preacher, and you have numerous calamities, and I have been a cross between the two. I believe in the two. I am so interested in this proposition, and I have visited the system, that I would not make a talk but I simply could not leave this meeting without saying these few disjoined words.

MR. HURLBUTT: Pardon me, I do not know how many men engage in the construction field, but I received an interesting set of figures, in fact two sets of figures, that I think will be of interest to you men. I want to show you in this way the value of safety work on a large constructive project. During the last

seven or eight months the duPont Co. was engaged in two large house projects which included the building of approximately one thousand houses and in each case we sent to the field a safety engineer. He organized his safety work, and what was the result? We took into consideration the cost of the safety engineer's salary, one-half of the doctor's salary, and the reason we counted on one-half was that we were using the bulk of his time in taking care of sick cases in the camp. In short, we felt we were liberal in paying for half of his time. Eliminating all these things, the fundamental expenses of trusses, the cost of accident on one of those was 16 cents per hundred of pay roll and the second, 21 cents per pay roll. To any of you who have to carry liability insurance, I think you will appreciate what those figures mean. We are perfectly satisfied that we carry our own liability insurance companies and in those particular instances the best rate was $2.50 per hundred pay roll, but this shows you that organization co-operation in construction is a paying proposition.

MR. FORSTER: Mr. William P. Ells is an ex-Pennsylvanian, and we were certainly sorry to see him go to Hartford to locate, and I so cross-examined him. He said he now had 355 inspectors working on safety, and last year he spent a million dollars on accident prevention.

This is not in defense of the company, but it shows they have spent and are spending real honest-to-goodness money. The insurance companies realize that it pays to prevent trouble, to conserve humanity and property. They also are making a very definite contribution to this fact, and I want everybody in this room to know it.

DR. DUBOIS: They say when you have something in your mind, the best way is to get it out by telling it, and I want to speak on the practical work and great help women have given. We get the women into our confidence and they say every day when you leave the house and go to work, "Be careful." When a man starts out, and his little girl says, "Daddy, don't get hurt today." It has done us a lot of good and no one at this convention has mentioned this subject, so I thought I would take this opportunity.

DR. WHITE: One of the greatest things duPont has done, and I would not be loyal to Dr. Tulley, their examining physician, if I did not say some thing about that, is that during six months I did not have one fatality. We had forty major accidents, as I recall. We have been away from there nearly a year. They required the employee to be off on an average of four hours, and most of them were back the next day I simply want to cite this as the friends from Old Hickory were taking themselves a good deal.

MR. FORSTER: There are about 20 other women in the room, can't we have another suggestion from them? We would like very much to hear from some of you. If no other woman will talk, then another man.

DR. GIBSON: We have a notice with reference to a conference of the foremen, and that all apparently depends on the foreman for the reduction of accidents. I want to ask if they depend on the safety Committees among the workmen.

MR. HURLBUTT: We do to this extent. We have usually our safety committees made up of foremen primarily in conjunction with the foreman safety committee. We prefer to have them work that way. Then, we have the foremen meet in a body that will discuss or recognize their own committees, and will give the other fellow his views, and talk over what goes on in the other man's area. They thrash it out without consulting the management. And then you want to talk after a while to your workmen; let them come in and act as if they were really on the committees themselves.

MR. SHUTE: Mr. Hurlbutt seems to have had varied experience. I would like to ask him what experience he has had with electrical workers where each of the men must have or should have, necessarily, in training the intelligence, not only to keep themselves out of danger, but other workers.

MR. HURLBUTT: I must confess that I have had little experience in connection with a strictly structural proposition, and if you will pardon me, I will ask you to wait until tomorrow when the public utilities will be discussed by a man who is fully informed.

MR. FORSTER: I would like to know if any organization elected the members of the safety committee by popular vote.

MR. ? : The American Pulley Company does it.

MR. FORSTER: I was in Chicago two weeks ago and it was desired to get a popular organization together, and I said, "What have you toward popular machinery?" They said they elected their safety committee that way, and that the men have been intelligent in their selections. Popularity is a big factor in putting across something.

COMMISSIONER CONNELLEY: Some of the large steel companies—such as the Midvale Steel Company and the United States Steel Company—are trying to have the safety program combined with their welfare work. There is a corporation school association. If we can get the safety movement into the school organization, I feel sure it is the first step in the Safety First movement. We are having this plan tried in most larger places, Philadelphia, Pittsburgh, and so forth.

MR. KNOWD: If, as you brought out the fact today, it appears that the foreman is to be the chairman, I think it is much more democratic to elect a chairman instead of a foreman, because what if the foreman is as unscrupulous as the boss himself, and the man does not seem to be in the organization at all?

I am a painter, and I can name a spraying machine, and any other machine, I do not get a lead poison. If you are using a machine on a beam, on construction work, you will find your clothes will become saturated from the machine, but I am forced to use it. What becomes of the man who has to use the machine? Where is the safety for the man there? He has no representative. If he does not use it, he is laid off. But, I think as I said, it is much more democratic to elect a chairman instead of a foreman.

MR. FORSTER: You have raised a very pertinent point. Mr. Hurlbutt showed how the proposition is developed from the top down. Now, some safety organizations are made up equally of foremen and workmen, and the foreman in one and the workmen in the other, and you are right. In order to be democratic, you have to have a man represented, and it is very common to have the men elect their chairman. With the workers committee they are—all the men talking friendly among themselves to make themselves heard.

MR HALL: I would like to ask the representative from the duPont Company how they get their committee? Does the firm through its management ask the management or the workmen?

MR. HURLBUTT: In the case of our construction men in the work of the field, the resident engineer. In the large projects where we have a safety engineer in the field generally, the safety engineer, after becoming acquainted with a foreman,

picks out a man whom he thinks the best chairman, and gives the name to the resident engineer who sends word to that man that he is appointed. That is in the case of the first chairman of the meeting. He serves three months. At the end of the three months the foremen in a body, who make up that meeting, elect his successor.

The safety committees are appointed by the foremen. The safety committee serves six weeeks—two—four and six weeks respectively, and the chairman at the end of two weeks, and a new man is appointed by the chairman of the committee who takes his place, and from that time on each man will serve six weeks, and he is appointed by the foremen themselves.

MR. HALL: I belong to an organization in a business that makes weaving tapes, and this organization is nearly 2,000 strong. If any man attempted to force anything on us, we would object. The 2,000 would select their representative on that safety committee because they have men there, and I believe we know what is necessary for our safety—in fact more than all the college graduates who come along, but it may be egotism. We have had demonstrations enough, and we would not allow anything like that to enter into our business. I have been up here in this lobby in behalf of the legislature safety not only for men, but for women and children, but we have been always battling and battling hard, and today it is all benevolence; everything is lovely today; every one knowing the same line. Employers, we have been dealing with this proposition for 40 years in that line of business, but every move has had to be coerced. Strikes have lasted for months, and then they would say "go to legislation."

I have been up here when we got lost on the statute books, and when we thought the time had arrived for thought, they at every angle fought the Labor Law—the laws that we most needed enforced. And after I have spent weeks and weeks looking over legislation, the court would step in and say that it was closed legislation, and unconstitutional, and therefore became nullified.

I have had others talk about sanitation. We have had very little for the last year at least. We have had in a chaotic condition, but we believe the time has arrived now to do real work, and not so much talking, but real action. I want to tell you I served eighteen months as factory worker, and ten years at penal servitude, out of a job. I think that the time has arrived that if the employers do not line up and do the right thing, we should apply the law.

Do you think you can make Americans out of that? Because we have had terroism? In the last ten years it has been different, and I have a big family and am living a dream, but I am back again in my old calling. Here, in the plant, a water pipe froze up—sixty men out of work, no water running, and talking is doing nothing to ameliorate those conditions. I am here to spend a week with you if it will do any good, but let us get to facts.

MR. FORSTER: The battle has not been entirely won, I admit, and if it had been, there would be nothing for us to do. But I am glad Pennsylvania is in the front row, and there is still much to be done. We must look out for safety and sanitation, and see that they are kept closely allied. We do not believe it is fair to the State of Pennsylvania to keep accomplishing nothing. We believe Pennsylvania should keep in line and remedy these conditions, and we will wait patiently, but I want to say if it is not done, you will hear from us. I am the fellow representing them, and I want to see it carried through and soon.

MR. JAMES: New Jersey Link Company have been keeping a safety committee. We have not elected any of the members, but they are selected by engineers and chiefs of the department to look after the interests of the men working. Now these committees meet every Tuesday morning, at nine o'clock. Minutes are read and

all accidents on the plant are read and on the bulletin board, showing slight injuries. While these accident cases are read they are much discussed, and each man expresses himself as to the best means of overcoming these accidents and educating the whole plant. After that we take the committee through the plant, or part of it, and show them how the guards are to be applied and the need of the guards. Then, after going through that particularly, we meet at two o'clock in the afternoon and each man must give some explanation as to what attracted his interest most, and in that way again we are bringing the men around and begging them to express themselves, so that they can go back to their departments and tell their chief and call his attention.

We try to prevent accidents by guards or otherwise—all of these. In the afternoon, we give them particular training in First Aid, and after that two months they are thoroughly competent to be First Aid Men. After that we bring in new men and relieve the older men, and keep the organization alive. We have wonderfully reduced all our troubles this way.

MR. BLACK: In our place, every shop has one representative for 25 employees, and every one must have been an employee for two years. The man, to vote, must have been employed at least six months, and this company, who have had this school working over a year, has met with wonderful success. The safety organization—the men have taken the most wonderful interest and have gained good results.

MR. FORSTER: I have been talking to men in the vineyard, and I think you realize that the best by-produce is the getting together of the management and the men. It is an absolute fact that the safety committees were the first agencies for getting together management and men, except where a strike was threatened. From the foundation of accident prevention, to which there could be no objection, I maintained the big broad industrial plan, industrial relation is only a part.

The Dean says no official limit as to time, but I want you all to come back tonight.

MR. JACOBS: I heard this gentlemen say it only cost him 16 cents to pay losses on, and that the best rate he could get was something like $2.50. I do not like to see that go by, but we would have to give him a rate based on his experience of the three preceding years so that he would only pay us just what his insurance had been in the past. I do not want you people to think the insurance companies could get these things right out of the air.

MR ? : That is, of course, true, because we are based on an experience rating. The last rating of the Casualty Company is on an average of about 60 per cent. of what they took in in respect to losses. You have had a plant service, and a medical service, and a legal service some time, and the duPont Company—no corporation can bother you much.

COMMISSIONER CONNELLEY: One word about the meeting tonight. I trust you all will be here promptly. We feel that we shall have a real good program. This conference, to my mind, ladies and gentlemen, has been well worth while. The discussion brings out so much. The meeting is now adjourned, and we hope to see you all at eight o'clock tonight.

MONDAY, MARCH 22.
EVENING SESSION.

CHAIRMAN: Commissioner Clifford B. Connelley, Department of Labor and Industry.

ADDRESS OF WELCOME

By The Honorable William C. Sproul, Governor of Pennsylvania.

COMMISSIONER CONNELLEY: Ladies and Gentlemen: Early in this year I went to Governor Sproul's office and laid before him the definite program of the things we would like to carry out this week. He agreed to everything that was on the program, and he said, "I want to help you to try to make this conference a success." Up to date, to this very minute, it has been a great success.

Previously I have had occasion to go to the Governor's office with work and I have gone to him with real difficulties time after time, and each time he has said, "I am back of you." With that kind of guidance, with that kind of support, and with a man of his calibre always behind one, why would not this meeting and every other meeting be a success?

I do not propose tonight to say what I might say about Governor Sproul and his interest in Pennsylvania and his interest in the Department of Labor and Industry; his insight into the subject of rehabilitation which we have established in the Department, and the many things that he has accomplished each day for humanity. I could take up almost all evening if I should deal with this subject, or should tell you how much he has done for and how interested he is in Pennsylvania. I am not going to do this. I have asked Governor Sproul to come here and say a word to you tonight. It is my pleasure to present to you, The Honorable William C. Sproul, Governor of Pennsylvania.

GOVERNOR SPROUL: Commissioner, Ladies and Gentlemen: I understand, perfectly, why I am popular with Dean Connelley because he has made a confession tonight. He mentioned a great many occasions upon which I had agreed with him. I am glad he feels that way. I am always glad to have been able to have agreed with him, because his suggestions, the lines which he has laid out for operating the very big department of which he is the head have invariably appealed to me as being sound and entirely in the right direction.

I am very much interested in this meeting, and I am very much gratified indeed to see the interest manifested by this splendid attendance. I am ambitious to have Pennsylvania lead in the things that are worth while. We have a great advantage in most of the material things. We have been endowed by nature with a territory almost unequaled, probably entirely unequaled on the face of the earth in its natural resources. There is more here in this 45,000 square miles—more of the essential things for the development of mankind along the lines of the highest civilization—than probably can be found anywhere else on God's footstool.

We are fortunate, too, to have a population—I think the finest population on the earth—certainly the most typically American population, for the reason that the origin of our people are more diversified than any other 9,000,000 people on the face of the earth. Our people show to a better degree, an exemplification of what America and Americanism can do for the people who come here. Some of us have been here through generations. Others of us have not been here so long in our antecedents, but we soon become Pennsylvanians, and I feel a great pride in the fact that students of the question say that Pennsylvania, better than any other place in the country, assimilates and takes care of the people who come here.

With all of those things, our natural richness and splendid population, we ought to stand first in everything which makes for the betterment of mankind. We ought to stand absolutely first on account of our iudustrial pre-eminence in everything which relates to industry.

Despite the richness of other States, we are still the leader in mineral production, in that our mineral products are equal to those of any other three States in the Union. That is something to think of and also to be very proud of. At the same time we have an industrial pre-eminence which is conceded everywhere. Pennsylvania is the most industrial State of any State in the Union.

Some people are surprised when you go and talk about Pennsylvania. I noticed it at the Governor's Conference. I noticed it in agriculture, and they said "You don't seem to care so much about agriculture in Pennsylvania." Why, Pennsylvania, with all her mines and other interests is still one of the great agricultural States in the Union and ranks with Kansas and Missouri in the value of her agricultural products. No wonder.

But we want to be appreciated in the accomplishment of human advancement plans, like the things which you are working on here. Pennsylvania has the means and disposition to take an absolute leadership in the safe-guarding of industry, and the rehabilitation of industrial cripples. I am proud today, and it seems quite a coincidence that I had the pleasure of signing the first warrant for the education of a young lad who is beiug taken care of in our new rehabilitation plan, who lost an arm, and we are giving him the very best advantages and opportunities that we can give him. We have only started in fact, and we propose to follow it out and if we stay around here as long as we hope, we will show great things of Pennsylvania in the new law of the legislature.

I waut to thank you all for comiug here. We will stand by you to the limit in all of the good things in connection with the Department of Labor and Industry. A comparatively new department, but at the same time a department which has proven its great value to the State, and of which we are indeed very proud. We have great confidence aud satisfaction in the work of the department and the entire personnel, and I want to say to all who are here tonight that we will stand back of you, and to the limit, in the things which you are laying out to do. I hope the results of this conference may bring out the interest and zeal of the entire State in this Congress, and you may take with you, a new interest and a new devotion in carrying out the plans which the State will help to execute. I thauk you.

COMMISSIONER CONNELLEY: In arranging our program, we thought of having Mr. Charles M. Schwab with us. In reply to our first message to him he sent word that he would be very glad indeed to take part, and would be here if he was physically fit.

Later on in our correspondence with him, he believed that he could come and only four days ago he still thought he would be able to come. In getting our final program printed, we felt reasouably certain that Mr. Schwab would be with us tonight, but I am sorry to say that Mr. Schwab will not be able to be here; perhaps due to the promises that he made Mrs. Schwab, because he has not felt very well since his strenuous work during the war.

Though we are very much disappointed, we are yet pleased to say that when Dr. Hamerschlag came from New York to build up the Carnegie Technical Schools, he and Mr. Schwab, became extremely iutimate and the work carried out in that institution under Dr. Hamerschlag's supervision received also the support of Mr. Schwab.

I asked Dr. Hamerschlag, if he would not come and be with us, having seen him only yesterday, and he said, yes, that he had some matters to take up with Mr.

Schwab and would then come over. Now, that is why we are honored tonight, by Mr. Hamerschlag's attendance, and when I asked him to take Mr. Schwab's place—well, I won't say what he said. He fits into a place where he can always do some good, as does Mr. Schwab, and I am going to present to you a mau, young in years but old in experience, and an organizer of technology work and a builder of schools, such as we do not have in any other place in the country except in Pittsburgh.

Dr. Hamerschlag believes that industry made it possible to have some of the best minds in the couutry associated with him. He believes in union movements and believes in leadership and we are going to listen to him speak on the subject that was assigned to Mr. Schwab, "The Future of Industry." I have pleasure, indeed, in presenting, Dr. Hamerschlag, president of the Carnegie Institute of Techuology, of Pittsburgh.

THE FUTURE OF INDUSTRY.

By Dr. Arthur Hamerschlag, President of Carnegie Institute of Technology, Pittsburgh, Pa.

It is with some awe that I undertake to carry the mantle which ought to have been placed on the shoulders of my beloved friend, Mr. Charles M. Schwab, but I cannot very well resist the appeal of this splendid audience, and, in the presence of our Governor, to testify my appreciation in the words the Governor has just said of this great State. I thrill to the message of leadership, and to the message of performance, and to the message of humanity, beloved in the better day which is to dawn for all of our American people when labor industry becomes more enforced and a part of our National life.

We are proud, indeed, of Pennsylvania. We are proud, indeed, of her achievements, but we are still to look ahead. Its forward-looking programme, inaugurated by Commissioner Connelley, was only one step in this great movement, but it sent a note that gives the theme to a man unqualified, as I am, to speak in the place of that great captain of industry, the President of the Bethlehem Steel Company—Charles M. Schwab.

We are inclined to measure the growth of industry and the price of men engaged in that occupation; we like to measure it in production measured in money. We think of it in terms of usefulness. We are proud that the growth of industry goes on with the growth of population, and still the vast resources stored up practically be undiminished in our Nation. But industry today is crude—undeveloped. It still needs a marked touch of education. It still needs the spiritual touch of an interest in those who are engaged in industry. It is crude. Oh my, how crude. Do you realize that in this big State, as in the other States of this country, vast numbers of men and women are virtually undertaking physical tasks and burdens which are totally unnecessary, which can only discontinue when we are all made to recognize the importance of and the economy in unraveling some of these crudities?

What is the future to give if it is not to release men and women from physical toil and labor. It is to bring in their lives the touch of something that comes from skilled and trained minds. In the State of Pennsylvania today—this State alone—five hundred million tons of coal are mined every year. We are very proud of that total; of the richness of our resources, and of the labor which has brought it from the bowels of the earth. We are proud of the vehicle transportation facilities which enable them to carry it from far below the earth to the surface, to the factory and to the consumer.

Modern industry in two-thirds of the whole country is so enabled to operate their establishments. But just stop and think. Did any one of you every try to move a ton of coal that had been dumped in front of your door into your cellar to feed the furnace fires in your home? Well, every ton of that five hundred millions of tons of coal taken out of the mines has to be moved after it is mined and dropped to the floor of the mine. No matter what machinery you have for getting it, and no matter what kind of explosives are necessary to render it to pieces, human backs and muscle and sinew are at the other end of the line, and with the shovel lifted that coal and put it four or five or six feet high into the cars to bring it out of the mines.

Try to picture, to yourself, what a hundred thousand mines would do if they have to lift all that weight into these cars. Is it fair? Is it progress? Have we

any reason to hope that in the future—in the near future—trained minds will devise some machinery with which this tremendous weight of coal will be lifted instead of by hand and by muscle. Think what it would mean. Have we not reason to hope that in the future trained minds will free mankind from its burden by providing machines and appliances? It would mean an equal tonnage with much fewer human beings cut off from God's sunshine and in the mines. It would mean a greater output per man; a greater reward for each man, who would instead of using his physical muscular strength, be permitted to use it elsewhere.

Take the vast farming lands of today, talked of in the terms of agriculture; another phase of industry. How many of the farms in this State still expect the farmer and his wife and his children with bent backs, in the broiling sun, and in all kinds of terrible weather, to give out their physical strength to it,—to have them walk with slow and measured tread behind slow-moving horses while the soil is tilled. The future agriculture with the tractor will greatly decrease this trouble, where two or three men and a horse have to do that arduous physical labor which so many of you know about who have been brought up on the land. And the same with conditions prevail in the mill-in the factory-in any plant.

What I have said concerning labor is that it still awaits the magic touch; the education and trained engineers, who in order to increase the productiveness of it, and to multiply and strengthen the human element, will bring it to the service of man and therefore to the service of the State. The future industry of this State will be multiplied a hundred-fold and in that multiplication all that honest industry will not be alone because all will be multiplied by those who contributed to make that industry possible. Those who work in industry will all be honest, at least in part, and they will get their rewards in proportion. As man's physical burden is released, the Nation's burden is placed at his disposal.

The future of the State demands that we should eliminate waste. Waste always subtracts—never adds. By its elimination we will enrich the lives of the American people. But to stick to the same topic. Have you ever thought of the terrible waste in coal carrying? We take it from the mines; dump it into flat cars and we haul it with locomotives, and after hauling it perhaps long distances, we consume it in a furnace and the energy which comes from it is called the value of the coal, worth so much per ton. Is this the true value of the coal? Suppose instead of carrying it bodily with all this machinery and consuming it in the furnaces, we would divide it up at the mouth of the mine and out of it take the fuel gases necessary to convert it into the best force of power for electricity.

Suppose we take the residuary bi-products and refine them and cleanse them—and have you any idea of all the hundreds of bi-products which would come from that coal—equaling sometimes 10, 20 or 30 times the value of the coal itself in the open markets of the world? Where we use it for making dyes or manure with which to fertilize, or one of the thousand and one things which nature has stored into the coal? How can we eliminate waste? Every time we burn a ton of coal in a boiler we throw away this bi-product. We throw away the very part of the coal so much needed in the steel industry. We have only a few gases with which to produce the heat. If you could take the 500,000,000 tons or even a few million tons and convert it into power and save all the vast loss of transportation, what do you think you could do with it? You could pretty nearly pay the public education bill in the State of Pennsylvania; you could reduce very materially the charges on the people which otherwise they must now bear because we waste this precious material.

If we had taken the natural gas from the Pittsburgh region and bottled it and sold it for the price of artificial gas it would have given time to the chemists to extract something equally valuable; the gasoline with which to run your motor cars; helium, the most precious of all; methine, then there would not have been any

danger of our planes exploding. From that natural gas, bi-products more valuable than the price of the gas, which in many instances have been wasted in huge quantity without variation or check because it was too much trouble to turn it off, and it was easier to let it run.

So it is with clay and sand for the making of brick and glass. But we are a wasteful nation, and the future of industry demands that we stop this waste. There is but one way to do it, and that is to bring more trained minds with greater intelligence to bear upon the problem.

Why do I speak of the future of industry only in this way? Because it lies at the base of human happiness. Eliminate waste and you enrich the people. When you enrich the people you are sure to give them their educational opportunities. You are sure to give them the comfort and education and environment which they need. Future industry can be and is spelled most simply:

1. Conserve the resources through intelligent use;
2. Use human labor saving devices;
3. Improve environment in which industry will work, and that is what this Congress is preaching.

And last of all—intensive work while working. Do an honest day's work—a full day's work; a day so filled with enthusiastic effort on the part of the human being working that it will startle the modern workman and employer, and the reason we will have that enthusiasm is because the rewards at the end of the day are going to be so big and to the great attainment of wealth that will go to those who know how to use it there will come the opportunity for real recreation and amusement which is sane. The type of home and living which is behind the stretch of our imagination has differed from the American home today as much as the hut and hovel from the old days. We want streets and roadsides so cultivated and made beautiful that man's life will not be all that of work, but that he may have the spiritual life which comes from the combination of all these things. I thank you.

COMMISSIONER CONNELLEY: When I was trying to arrange this program, I called on Mayor E. V. Babcock, of Pittsburgh, to take part. The Mayor said, "What would you have me do? What do you want me to talk about?" I said, "I would like to have you talk on the "Co-operation between the City Government and the State." He said, "That is quite a subject." I said, "Yes, I know it is and I know that you can tell the history of it in earnestness, just how to do it and how co-operation is obtained."

I remember distinctly, twenty years ago, when he was in the southern part of this country, where they were building homes and school houses for the children so that they might know what we were talking about when we came to talk about co-operation. I know the interest that the Mayor has taken in the welfare and up-lift of the human mind. I know just what he has done for humanity. I know how sincere he is to get what we want, if it is right, and I am sure that we shall be enlightened and delighted to hear the Mayor's message on "Co-operation Between the City Government and the State." I take pleasure in presenting, Mayor E. V. Babcock, of Pittsburgh.

CO-OPERATION BETWEEN THE CITY GOVERNMENT AND THE STATE.

By Mayor E. V. Babcock, of Pittsburgh, Pa.

I am honored indeed to have a place on this program, because the program displays the fact that there are many distinguished citizens of this State here to lend diguity and enlightenment to this Congress. Indeed I am grateful to you, Mr. Chairman, for your introduction, although I disagree with you to a very large extent. My friends, he did not do anything of the kind that he said he did. He suggested, or commanded, me to come here and talk upon the "Relationship Between the City and State Government on Safety." There were no "ifs" and "ands" about it. I simply got my orders and I am here.

The subject, when I come to apply myself to, is indeed a particular one. The State Government, the State itself, is composed of cities, of communities, of political districts that go to make it up, and without them the State would stand for no more than our National Government would stand for.

This State is a vast Empire with ten per cent. of the population in the country that you and I are parts of—a great diversity of population. Who might have believed that we have 35 nationalities, perhaps, to weld into one, homeogeneous people.

I want to say, my friends, that we have come together in the Capitol of this great State, assisted by one of the greatest leaders Pennsylvania ever had in God's world. It is because he is a great big man, the leader of men that you are here tonight. It is because that he realizes that this laboring industry principle is State Government and stands for something, or at least ought to stand for something, that you are commanded, invited, to be here tonight that you might be enlightened. Well do I remember the time when he shouldered the responsibilities of this day, when he looked for a head of this department. The satisfaction that he put in the man that had to be the head of that department. In his person, he must not be too polite, he must not be a labor leader, he must not be an employer of labor, but an essential student of what industry ought to give to their men. An essential student of what laboring men ought to expect from industry. That is the kind of a man that would fill this bill. Well, Commissioner Connelley is in the job. I hope he fills every requirement. I have known him for years and I know he was selected after looking the State all over, and I know if it is in the Commissioner he will fill the bill.

One of the beautiful things of this evening is that his boss, Dr. Hammerschlag, would lay aside his other busy interests of the day, go out the whole day and travel to Harrisburg to listen to Dean Connelley, to be with him, associate with him and to be called on at the last moment to take the place of that now probably greatest steel man of the world and that our Carnegie and other institutes have ever had—Mr. Charles M. Schwab. I am glad, myself, Schwab is not here, because any man that gets on the platform and tries to follow Schwab has got some job.

I remember one of the stories Schwab told. He told this one in Youngstown, and I will apologize to the numerous specimens of the feminine gender before me. It is not too raw. Mr. Schwab was passing through one of the plants one day and ran into the foreman and the foreman was telling him of an experience he had with a certain fellow. The story goes like this:

The foreman had a man by the name of Pat, a good Irishman. He got a little careless, and did not care whether he worked or not. One day the foreman came along and said, "Pat, you won't never work or let anybody else work. Go to the office and get your money." Pat was a little calm and slouched out; went to the office and got his check. When the foreman came along the next day, Pat was back on the job. The foreman said, "Pat, I thought I discharged yon yesterday." Pat replied, "Damned if you didn't, but when I got home last night me wife raised Hell."

Mr. Schwab is one of the greatest steel masters of this State and it is too bad he is not here for your sake, but mighty good he is not here for my sake.

This question of safety is one that not only applies to the Department of Labor and Industry, but also the Department of Health. Their laws and regnlations have to do with the safety of all the people of the State. Almost every department of this great Government, headed by Governor Sproul with a wonderful force—like a big family—are striving for safety in every department almost on the same line as this labor and industry department. Even the financial end, with our banking department, is safegnarded.

I am allowed only 15 minutes on this jeb. I want to say to you that yon, and I ought to be proud of the organization that is now in Harrisbnrg, gniding the destiny of the wonderfnl State, and yon and I are aware of the fact, and realize that their aims and ambitions are to safe-gnard all the interests of all the people in this great State. You know it is hard to recognize what all this means.

This safety proposition was created, probably, in the industrial plant itself. Probably for varions reasons. The cost of life and limb and accident was such that some wise man demanded that safe-guarding be developed into the law of life. They combined the two and it spread and grew until the Commonwealth itself took it up, and now is the watch-dog of every indnstry in the State of Pennsylvania.

They asked me to talk about the "Co-operation Between the City Government and the State." The State makes the laws and rules and regulations. The city also makes laws, but they always observe it? If we did not have co-operation we would be insane, because they go hand-in-hand and shonld be hand-in-hand. A great big thing that is in my mind of public safety is safety along public lines.

Now, Pennsylvania with its 35 nationalities and its wonderfnl mixed population and its wonderful aggregation of all industries is a wonderful State. Yon all know what we went through last year. Through trials and tribnlations. I may be indiscreet even in referring to it. It has passed and well passed, but what would we have done in 1919 without co-operation? The most extraordinary strike and contest in the history of the country was in our State and look how they worked. Co-operation between State and political defense in this great State meant mnch. The statement of the State officers had to be altered and adjusted to a large extent. Each demanded more than the other.

I want to say to you that the Mayor and the Governor and those charged with the trnst and responsibility of keeping peace had to be the arbiters and do the best they conld do to draw a line of fairness between employer and employee in contests of all kinds, and make ont a line to demonstrate and show that his right and the policy of the State and the policy of the city and the policy of the commnnity, and I care not how small the matter was, they were sure to carry it through. Can you realize when you look at your State and think what she went through the past year and think that she went through it without having a panic? Are you not delighted to be here and proud that you are in Pennsylvania and that yon are protected by her laws and by the people inside of that State to nphold the majority of the State and prepare its law and keep it in peace? It matters not how big a State or Nation may be and it matters not how small a

community may be, we must have co-operation and peace and order, and order stands for anything in the eyes of the world. We must have co-operation and we will have it in all occasions.

Now, my friends, I have taken a great deal of your time, but there are two things that we need, a leader of men or a follower of men, so that when this younger generation comes to the front, they are going to have something to fall back on and have someone to follow in the work. We cannot all be leaders, only a few of us. Some of us have got to lead. We must educate ourselves some way or other, and it is your duty to help, too, and be associated in educating and teaching the rest of us to be followers.

Now, ladies and gentlemen, I thank you for your attention and I am prouder tonight than I ever was. I was here a week or so ago and saw the wonderful organization in the Capitol, and I had the pleasure of looking into their faces for a few moments. Never before did I realize what Pennsylvania's standing was. I see this aggregation of splendid women and men that are handling Dean Connelley's department and know that you are here for a purpose and when I think that you can command those other citizens of the State to come to you and help, I must say that I am prouder of this State tonight than I ever was before and I wish you all kinds of success and pleasure. Let me say to you that that woman or that man who does not take it seriously enough to realize that he has got to render some service somewhere or somehow to that somebody in this State, this World, is going to make a failure of life and I trust that this may not be so, but may be a great success. I thank you.

COMMISSIONER CONNELLEY: It is not very late. We have an exhibit in the Penn-Harris that is really worth while, and after our adjournment, I trust that those of you who have time will go to this exhibit. Tomorrow on the program we have a unique number. You know the war has brought out many things. It has opened many avenues wherein an individual can show his worth, and do his best. And so tomorrow the "Making an American" is scheduled, with a practical demonstration by Mr. F. H. Rindge, of the Industrial Department of the Young Men's Christian Association, of New York City. His demonstration will consist of teaching twelve men, from the Bethlehem Steel Company, English in half an hour and showing just how it is done.

I believe one of the best things which the United States Army did to lead men and bring them closer together was when Peter Robert's system was adopted to teach the foreigner English. No man in the world has done this better than Peter Roberts. He has demonstrated all over the United States just how this can be accomplished, but in writing us in answer to our invitation to appear on the program, he said, "I wish you would allow Mr. Rindge to speak in my place as he is very much better able to do so than I am." We immediately got in touch with Mr. Rindge. He will be here, and through Mr. George Fonda, of the Bethlehem Steel Company, we are going to have twelve foreigners come here, and Mr. Rindge is going to show how they can be taught English.

There has never been a time when we needed the co-operation of the foreigner as we do now. It has been demonstrated time and time again that the lack of co-operation is not only due to the men themselves but to the leadership of the foremen, and that they do not understand the American language; and I believe that this can be so demonstrated that you can see just how work of this kind can be accomplished. I want to thank those of you who are taking a part in the program, because we need in the Department of Labor and Industry the co-operation of every right-thinking person in the State. We hope you will attend the remainder of the meetings because out of them will come much good. Two of the sessions are set aside as round table discussions where the suggestions and discussions are open to all.

Tomorrow evening we shall have what is known as a Woman's Evening. We shall have only women on the program. Mrs. J. Willis Martin, of Philadelphia, will be the chairman. She has made a name for herself by her magnificent work during the war period. We shall also have Mrs. Kate Waller Barrett, of Alexandria, Va., who is considered today one of the foremost woman thinkers and who has done much for women and children in labor and industry. Another speaker is Mrs. Mary Woolman, who followed the most practical lines of industry during the war and I am sure that she will give us a very practical talk. For a number of years she was at the Columbia University, teaching girls how to go into industry as teachers, and now she is in charge of a great school for girls in Boston. In consideration of these facts, I trust you will be able to know these women and their work, and I sincerely hope you will come here tomorrow evening to hear a wonderful expose of women in industry. I thank you.

TUESDAY, MARCH 23.

Morning Session.

CHAIRMAN: W. D. B. Ainey, Chairman, Pennsylvania Public Service Commission.

COMMISSIONER CONNELLEY: The conference will please come to order. I have three announcements to make.

First, we would like those who have not registered to register either in the lobby or at the Penn-Harris Hotel.

Second, at twelve o'clock, or twelve-fifteen, there will be a group picture taken of the representatives and delegates in front of the Capitol building.

Third, this afternoon at four o'clock the Civic Club of Harrisburg will give a reception to the visiting women of the Congress. All those present are invited to attend this reception, 612 North Front Street, at four o'clock.

I am somewhat disappointed this morning to say that we have not been able to have Mr. Atterbury with us. Until Sunday, he believed he could come, not knowing the condition of the railroads of the country. But, fortunately we have to preside as chairman of our meeting, Mr. Ainey, of the Public Service Commission. Mr. Ainey is much interested in the Department of Labor and Industry and much interested in the safety movement and in all the public utilities of the country. I have great pleasure in presenting to you, Mr. Ainey.

MR. AINEY: Mr. Commissioner, and Ladies and Gentlemen of the Congress: I trust it will not be amiss for me to again emphasize our joint regret at the absence of General Atterbury. I am sure it would have contributed very much to the interest of this splendid conference if he could have been here.

When the Commissioner asked me this morning if I would preside over your deliberations, I felt constrained to say "no." I knew I could not add anything to the consideration of matters you had in view, but, at least, by my presence I might emphasize and prove my interest in the Congress as a whole, and this particular subject you have for your consideration this morning.

I wonder if it would be appropriate for me to tell you just a few things with the respect to the work of our Bureau of Accidents in the work of the Public Service Commission. I find in a record just put on my desk, prepared by the chief, that the street railway crossing accidents have been reduced materially in 1919 over 1918. In 1918, 245 per cent. were killed at street railway crossings; in 1919, 193. As to injuries, there were 3834 in 1918, reduced by over 800 for the year past. In 1918, there were 1327 persons killed at grade crossings; in 1919, they had been reduced nearly to 400 from 897. With respect to the injured, there were 11,012 accidents at grade crossings over steam railroads in 1918, and that has been reduced to nearly 4,000 rather than 7,238.

I thought you might be interested in that summary that has been gathered together by the chief of the Bureau of Accidents of the Public Service Commission.

Without detaining you longer from bringing up matters which you have this morning for consideration, I am going to introduce that branch of the subject under title of the Steam Railroad, and call on Mr. T. H. Carrow, Supervisor of Safety, of the Pennsylvania Railroad, Philadelphia, who will address you on the subject of, "The Steam Railroads."

THE PUBLIC UTILITY AND ITS HAZARDS: THE STEAM RAILROADS

By T. H. Carrow, Supervisor of Safety, Insurance Department, Pennsylvania System.

MR. CHAIRMAN, LADIES AND GENTLEMEN: The steam railroads of the United States represent a property value of twenty billion dollars, traverse two hundred and fifty thousand miles of territory and employ two million workmen.

The business they handle amounts to four hundred billion freight ton miles and forty billion passenger miles yearly, producing a gross revenue of five billion dollars.

They carry on a greater variety of work than any other single enterprise and under a diversity of conditions that renders accident prevention work on the railroads broader in scope than in any other branch of industry.

The observations contained in this paper are based on the experience of the Pennsylvania System, and as it handles about one-eighth of all railroad business in the United States, the conclusions presented should be generally applicable to all railroads.

OPERATING DEPARTMENT.

In conducting their business railroads are divided into several General Departments, but for the present purpose we are concerned only with the Operating Department, which embraces the Motive Power, the Engineering and the Transportation Departments.

The Engineering Department is responsible for the design, construction and maintenance of buildings, bridges, tunnels, signals and roadway.

The Motive Power Department is responsible for the design, construction and maintenance of locomotives, cars, power plants, machines, tools and implements, and has charge of all plants where this kind of work is carried on.

The Transportation Department is responsible for the movement of freight and passenger trains, receipt and delivery of freight, loading and unloading freight, the management of passenger, freight and transfer stations and the operation of floating equipment.

VARIETY OF WORK AND OCCUPATIONS.

There are many distinct lines of work performed by the employees in the three departments, such, for example, as carpentry, blacksmithing, woodworking, boiler-making, electric and autogenous welding, bolt making, tin and coppersmithing, foundry work, machine work, painting, chemical and physical laboratory work, running trains, switching cars, handling freight, tamping track, unloading rails, ties and timber, telephone and telegraph line construction and repair, plumbing, pipe fitting, and so forth. In short, the activities of a great variety of crafts and industries are included in railroad work, the services of employees in more than three hundred different occupations being required.

HAZARDS.

Thus it will be seen that the enormous volume of business handled, the great diversity of conditions under which it is handled, the large variety of work

performed, and the corresponding number of occupations employed introduces many hazards to railroad employes, some of which are peculiar to the railroad and some of which are present in many other lines of industry.

Hazards may be classified under two general heads, as follows:

1. Hazards that arise from physical conditions.
2. Hazards inherent in railroad work and not related to physical conditions.

Under the first, or what may be called physical hazards, are included obstructions on, over or alongside of tracks, defects in cars, engines and safety appliances, unguarded machinery, inefficient illumination, poor design, construction and maintenance, bad housekeeping and so forth.

Hazards that arise from the nature of railroad work include the liability of being struck by trains, being jolted off engines or cars, slipping, tripping and falling when getting on and off cars or doing other kinds of work, getting feet or hands caught under material unloaded from cars or handled at stations, being struck or cut by hand tools, and the like.

Certain so-called physical hazards cannot be removed while others can. Similarly, it is not to be expected that employees will at all times successfully ward against the hazards inherent in railroad work, but to a very large extent this also can be done.

CAUSES OF ACCIDENTS.

The word "hazard" is a synonym of "cause" and in some respects the meaning of the two words is so nearly the same that it is difficult to draw a line of distinction between them. It is important to note, however, that a hazard may constitute only one of the antecedents of an accident, whereas the cause includes all the antecedents.

For example, a structure alongside the track is a recognized hazard, but it is never involved in an accident except when a man comes in contact with it by leaning out from the side of a moving car or engine. Similarly there is always a liability of slipping and falling when getting on and off cars, but accidents from this cause never occur if proper precautions are exercised before and while the act is being performed. But it is not necessary for our present purpose to draw fine distinctions between hazards and causes as a comprehensive system of causes of accidents discloses all the hazards with which the accidents are associated.

The system of personal injury accident statistics in use on the Pennsylvania System embraces seven hundred detailed causes derived from a study of accident experience over a long period. These causes are segregated under thirty-four general causes or heads, a division being made between road, yard, station and floating equipment accidents and the accidents that occur in the Motive Power Department. Within the scope of this paper it would be impossible to present all the detailed causes, so we show below general causes only:

GENERAL CAUSES OF INJURIES TO ROAD, YARD, STATION AND FLOATING EQUIPMENT EMPLOYEES.

Getting on or off engines or cars at rest.
Getting on or off engines or cars in motion.
Setting and releasing hand brakes.
Coupling and uncoupling cars or engines.
Connecting and disconnecting steam and air hose, including operating angle cock.
Accidents on or around locomotives.
Operating switches.

Handling baggage and mail and baggage trucks.
Falling in ash, turntable and inspection pits.
Slipping or tripping on coal wharves, platforms, walks and bridges.
Working on or around engines, cars or trains.
Crossing or walking in yards, or on tracks or bridges to and from work.
Insufficient clearances.
Obstructions around tracks and in yards.
Loading, unloading, and handling freight, etc., at freight and transfer stations.
Working on or around tracks and buildings, including loading and unloading.
Causes not otherwise classified.

GENERAL CAUSES OF INJURIES TO MOTIVE POWER DEPARTMENT EMPLOYEES.

Operation of machines and working of material.
Repairing locomotives.
Repairing cars.
Handling and use of hand tools.
Handling and use of jacks.
Handling material.
Trucking material.
Tools and material falling.
Working around engine houses, coal docks, ash pits, etc.
Operation of cranes, hoists, derricks, etc.
Obstructions and material in aisles, passageways, etc.
Defective floors and footways.
Erection of scaffolds and working on same.
Ladders.
Electrical.
Handling ice.
Causes not otherwise classified.

Under each of the above general causes the number of detailed causes varies from four to sixty while the number of injuries attributable to each detailed cause also shows a marked variation.

CAUSES BY OCCUPATION.

Effective accident prevention work is largely a matter of dealing directly with the individuals who are liable to get hurt. Therefore, in connection with the classification of injuries by detailed causes they are also segregated by occupations, that is, the injuries sustained by the respective classes of employees from each specific cause are so classified that the accident frequency in any occupation, as well as the number of injuries arising from each specific cause, may be determined and the attention of each class directed to the precautions necessary to prevent injuries.

RESULTS OF ACCIDENTS.

In addition to determining the number of accidents due to each cause and the number of persons injured in each occupation from each cause, it is also necessary to know the extent of injury by causes, as it is the aggregate results of accidents and not merely the total number, which enables us to determine the preventive measures that should be adopted. This division of the personal injury statistics of the Pennsylvania System shows the number of injuries by each respective period of disability, from one day up, and also classifies the injuries according to their nature, making a separation between loss of arms, legs, eyes, feet or other members.

PREVENTIVE MEASURES.

From the standpoint of prevention, personal injury accidents may be divided into two general groups, namely, those that may be prevented by the elimination of dangerous conditions and the installation of physical safeguards of various kinds and those that may be prevented by educational methods.

PHYSICAL SAFEGUARDS.

In respect to injuries that arise from defective or dangerous physical conditions, safety work has been developed to a point where it may be regarded as a positive science. Dangerous conditions are studied and safe-guards devised for providing maximum protection.

The State, the railroads and the industries have developed a complete set of Safety Standards and they are embodied in pamphlet form for convenient use. It is, therefore, comparatively easy to determine the safe-guards necessary and in most cases it is inexpensive to install them. Indeed, so far as the Pennsylvania System is concerned, the Safety Standards of the State of Pennsylvania and the other twelve States through which it runs, as well as our own Standards, are carefully observed, and I presume this is also true of the great majority of other large business concerns.

SAFETY EDUCATION.

In respect to those injuries that do not result from defective or dangerous physical conditions, namely, those that are due to inherent hazards of railroad work, which constitute approximately 90 per cent. of the total, we are confronted with an entirely different proposition. No possible change in the physical layout of the railroad nor the expenditure of any amount of money would materially lessen this class of accidents, because their antecedents are thoughtlessness, indifference, absentmindedness and carelessness. Such accidents can be prevented only by the elimination of these negative characteristics of the mind and development of their place of carefulness and constant attention to personal safety, that is, the cultivation of safe habits in the performance of duty.

Having called attention to the enormous proportions of the railroad business, the several departments into which it is divided, the various kinds of work performed, the large number of occupations employed, the multiplicity of hazards and causes of accidents and to various features of personal injury statistics, it is now in order to present for consideration practical measures for preventing accidents on steam railroads based on the foregoing observations.

CENTRAL SAFETY ORGANIZATION.

A central safety organization is a primary requisite in carrying on safety work on a large railroad. It should receive reports of injuries, reports of the safety committees, make safety inspections and special investigations of fatalities and injuries, see that safety rules and standards already in effect are observed and others introduced when necessary and have general supervision of the safety organization on the respective Divisions. It should prepare, analyze, and distribute statistics, safety bulletins and papers, provide motion pictures on safety and safety speakers, and in a general way keep in touch with all matters relating to safety.

DIVISION ORGANIZATION.

Each division should have a safety organization with a safety agent or some other person designated to direct the safety work. On divisions having five thousand or more employees the safety agent should devote his time exclusively to safety work; on smaller divisions it is practicable to combine the safety work with other duties. The safety agent should analyze the reports of accidents that occur on his division, study general accident statistics, familiarize himself with Safety Standards, safe methods of operations, dangerous practices, first aid, make safety inspections of all points on his division, including freight and passenger trains, and perform all other duties that may arise in connection with the supervision of divisional safety work, including the management and directions of safety committees.

SAFETY COMMITTEES.

On each division there should be one or more safety committees. On small divisions a division safety committee is sufficient, but on large divisions there should be in addition to the division safety committee, local committees in large yards, shops and stations. The committee should be composed of officers and employees, and as the purpose of the committees is to enlist and sustain interest in safety on the part of the individual members and through them the interest of all employees, the safety agent should provide an interesting program for each meeting and attend to the details of committee work in such manner as will keep the members interested and active. Papers on safety should be prepared and read by the members, accidents discussed and various measures for preventing injuries considered.

DISSEMINATION OF INFORMATION.

Both the central and divisional organizations should prepare and distribute suitable bulletins and literature on safety in order to keep the subject uppermost in the minds of employees at all times, but it is important to bear in mind that much of the written matter on safety is ineffective and useless and, therefore, great discretion should be used in this direction. Indeed, the preparation of effective safety bulletins and safety literature and the proper distribution of the same constitute one of the most difficult features of safety work and deserves the best effort of every safety organization.

PERSONAL INTEREST.

The results that can be accomplished in preventing death and injury on the railroads is determined by the personal interest taken in safety work, individually and collectively, first, by the officers who manage and direct the business and keep in motion the machinery of operation and, second, by the employes who lay the tracks, build and maintain the bridges, and rolling stock and operate the trains, and every reasonable means looking to this end should be employed.

CONCLUSION.

That magnificent results can be accomplished by following the lines above suggested is proven by the record of the activities of the safety organization of the Pennsylvania System during the year just past, a summary of which is presented in bringing this paper to a conclusion:

ACTIVITIES OF SAFETY ORGANIZATION, PENNSYLVANIA SYSTEM, 1919.

Number of Safety Committees operating,	179
Number of Safety Committee members,	2,493
Attendance at meetings,	24,420
Hours Committtes devoted to inspection,	59,055
Number of recommendations made by Committeemen for the removal of Dangerous Conditions and the elimination of Dangerous Practices,	28,827
Number of subjects discussed at Safety Committee Meetings,	4,583
Number of Accidents Discussed at Safety Committee Meetings,	5,812
Number of Employees Warned by Committeemen and others against dangerous practices (individually and collectively),	1,044,018

These are imposing figures, you may say; they show that a great deal of time and attention was paid to safety matters, but what actual results in preventing death and injury to the great body of railroad employees were accomplished? The answer to this question is that during the year 1919 the records of the Pennsylvania System show a reduction of 204, or 36 per cent., in the number of employees injured, there having been no decrease in the average number of employees in the service. This, we believe, is ample proof of the effectiveness or organized safety work and an unqualified justification for it on every steam railroad in the United States.

MR. AINEY: I certainly must congratulate Commissioner Connelley upon the wonderful results of this conference and hope it will have the same effect as did the methods adopted by the railroad company as told us by the speaker who has just addressed us with respect to the "Public Utility and its Hazards."

I trust I may say a word further regarding the Public Service Commission as admitted through conference with utilities rather than by the method of the arbitration department of matters that come within our jurisdiction, to invite the attention of the attendants of the utility bodies of the State of Pennsylvania. We have not always had them accept invitations and have had to send out some remarkable invitations. Let me call your attention to the fact that there are more utility bodies in the State of Pennsylvania by nearly twice than in any other State in the Union. But I must not detain you, let us pass to the consideration of "The Public Utility and Its Hazards," the subject that has been assigned under the title of the Gas Company and to the discussion of that subject. I refer to Mr. James B. Douglas, of the United Gas Improvement Company, of Philadelphia, whom I have great pleasure in introducing to this audience—Mr. James B. Douglas.

THE PUBLIC UTILITY AND ITS HAZARDS: THE GAS COMPANY.

By James B. Douglas, United Gas Improvement Company, Philadelphia.

LADIES AND GENTLEMEN: The accident hazards to employees incident to being engaged in the gas industry are comparatively few. Of a thousand reports contributed by 77 artificial gas companies scattered over 29 states of the Union, which I have recently examined, but 4.15 per cent. were due to causes considered peculiar to the industry; that is, leakage of gas, explosions and animal bites. The remaining 95.85 per cent. of the accidents were due to the causes figuring in industry in general,—hanging and protruding objects; falls into openings; nails, wire and glass; machinery; hot materials; hand tools; vehicles; falling objects; handling material; and greatest of all, slipping, tripping and falling.

Of the thousand gas industry cases analyzed, slipping, tripping and falling accidents caused the greatest loss of time.

This latter cause I note figures prominently in the electric industry, ranking third in importance in the causes, and second in days of disability, electric current being first.

According to our figures, in the gas industry operated by our interests in Philadelphia, in 1918 there were 23.1 accidents per thousand 300 day workers averaging 10 hours per day; with an average of 4.68 days lost per accident. In 1919 on the same basis, there were 15.8 accidents per thousand workers employed; with an average of 4.69 days lost per accident.

In "a section of the Iron and Steel Industry" in 1916 and 1917, the last years I find reported by the United States Bureau of Labor Statistics, the frequency is given as 100.8 and 81.0, respectively; and the severity, 9.3 and 8.3, respectively.

Among the last figures of this kind issued by the Bureau, I find the following:

	Frequency Per 1,000, 300 day workers.	Severity Per 300 day worker.
Arsenals, 1912-1914,	189.5	6.0
Machine Building, 1917,	92.6	6.1
Shipbuilding, 1917,	63.8	10.8
Navy Yards, 1918,	99.2	6.8

While these returns are not strictly comparable with our experience in Philadelphia, it doubtless will be conceded that our returns in 1919 showing the frequency of 15.8 and the severity of 4.69 speak well for the results obtained in the prevention of accidents.

In Philadelphia, our employee accident experience improved considerably in 1919 over its record for the year 1918. The lantern slide on which our experience is chartered (slide) shows clearly the downward trend of the accident curve. It may be noted from the average lines that in 1919 there was a monthly average of 36.6 less employee accidents than in 1918.

The days of disability to employees on duty during the same period were 46 per cent. less in 1919 than in 1918. The course of the days of disability curve is also shown on the lantern slide chart (slide), from which it will be noted that the average monthly days of disability in 1919 were 170 less than in 1918.

There also has been a steady downward trend in our fatal cases from 5 in 1917 to 2 in 1919. One of the 1919 cases could not have been prevented. In the other the human element failed, the accident being due to the stupidity of a fellow-employee.

We naturally feel encouraged over these results. Believing that practically all our mechanical hazards have been guarded, we feel that the results indicated are due,—first, to closer co-operation upon the part of heads of departments and foremen; second, to an ever-increasing general interest in accident prevention; and lastly, to specialized effort in the field of accident prevention.

Our specialized effort consists of periodical accident hazard inspections; first aid and safety talks to shop employees, illustrated by lantern slides and motion pictures; and the distribution of safety literature. We have hundreds of slides, which are used to illustrate talks on various phases of industrial accident prevention.

We have had several motion pictures made up, one of which is about to be shown you. It is a short picture entitled, "HOW TO AVOID ACCIDENTS.

(film)

MR. AINEY: I am sure that for a chairman of any meeting to attempt to speak in special terms of commendation with respect to an address which has met your approbation as the one just presented to you, is quite impossible, both with respect to the safety movement and the methods adopted by this great railroad; and the results following these methods have certainly been interesting and I am sure helpful.

We shall now have the privilege and pleasure of calling on Mr. Edward C. Spring, General Superintendent of the Lehigh Valley Transit Company, whom I now introduce to you. Mr. Edward C. Spring.

THE PUBLIC UTILITY AND ITS HAZARDS: THE ELECTRIC RAILROADS.

By Edward C. Spring, General Manager, Lehigh Valley Transit Company, Allentown, Pa.

MR. CHAIRMAN, LADIES AND GENTLEMEN: The hazards of the electric railway field offer a wider range and more diversified conditions than any other industry. Traveling the highways and city streets as they do, coming in direct contact with both vehicular and pedestrian traffic, the hazards met are of the most acute type.

The accident problem of the electric railway is a serious one, enhanced by the demand of the public for speed, both for their own constant traveling and for the movement of their freight and express, and this over tracks which are poorly protected by enclosed right of way and with countless grade crossings not always guarded. Each one of which may become the scene of a catastrophe.

The electric railways of the country have been keen to the fact that there is one expenditure in the accounts of an electric railway which brings back no returns; the settlement of accident claims. It would seem only logical that an expenditure of this type should demand the closest vigilance on the part of those interested. To this end during the past few years, when finances have been of such a vital factor to the industry, much attention has been paid to the safety game. Pennsylvania plays an important part in the electric railway operation of the country, as the State stands,

1st.	In the number of companies,	242
2nd.	In Electric Railway Car Mileage,	4,477
2nd.	In Cars Operated,	9,280
2nd.	In Invested Capital,	$757,000,000

Electric Railway hazards may be divided first into two great groups:

1st. Industrial, Accidents to Employees.
2nd. Operating, Accidents in Operation.

On the first group, Accidents to Employees, the hazards are most similar to those of industry, and I shall not touch upon them but confine my thought to the second group, Accidents in Operation. This group can be divided first, into three distinct classes.

1. Urban or City Operation.
2. Suburban Operation.
3. Interurban Operation.

Each of these may be divided into four major classes of accidents:

1. Boarding and Leaving Cars.
2. Collision with Cars.
3. Collisions with Vehicular Traffic.
4. Accidents to Pedestrians.

Of the first class, Boarding and Leaving Cars, this class of accidents which is approximately 15 per cent. of all street railway accidents, is by far too numerous considering the advent of the pay-as-you-enter and safety type cars, together with

the supposed vigilance on the part of the conductor. This class of accidents is up to the conductor and shows the necessity of eternal vigilance on his part, to be on the alert for the excited passenger who thinks of nothing but getting off the car the quickest way possible. The alertness of both the passengers and conductors is necessary in alighting from cars, that the street is clear and that access to a point of safety is sure.

Many accidents are occurring by passengers not looking for passing vehicles and are hit by the same; boarding and leaving the car while it is in motion, is prevalent in urban and suburban operation where the pay-as-you-enter type cars are not used, and forms a hazard which is very disastrous to the company.

Getting off the car backwards is a habit which the public is loath to change.

Collision with cars, this type of accident has been increased during the past winter on account of bad rail conditions. Perhaps no type of accident is more far-reaching in its results for damages to life and property than this class, and is more prevalent in urban and suburban operation. The responsibility of this class of accidents rests with the company and cannot be attributed to the public. The motorman is the responsible party in this case. There is no need of accidents of this class if due care and good judgment is exercised by the man operating the car. Ninety-nine per cent. of collisions of cars is due to gross carelessness and disobedience of orders.

Collisions with Vehicular Traffic: The term vehicular traffic today, with the passing of the horse drawn vehicle, means automobile traffic, and it is with this hazard that I will confine my thought in treating with the third class of accidents. Of the many problems associated with hazards of the electric railway industry, the most important is collisions with vehicular traffic, or accidents on the highways, and it is a lamentable fact that of all, it is the question to which the public gives the least attention, and in which it is very little concerned. What reason can we give for this indifference to the first law of nature, and what explanation is there for the recklessness with which the traveler on the highway now enters into such places of known danger.

Before going further, let us look for a moment at what this hazard means. America is the automobile center of the world. A conservative estimate made by the Alexander Hamilton Institute shows that there are 7,884,000 automobiles in the world, and of this number 6,500,000 were in the United States on July 30, 1919. We have, therefore, nearly five times as many automobiles as all other countries combined. Added to this interesting figure, the present output of the American automobile factories today is 10,000 daily. An automobile or truck to every third family, one to every 14 persons in the United States with an outlook for production in 1920 of 2,000.000 more. In comparison year by year of the number of automobile deaths and the number of automobiles in use, indicates that the deaths are increasing in almost exact mathematical ratio with the increased number of automobiles. In 1917 there were 3,000,000 automobiles in the United States, and nine and one-sixth persons were killed by automobiles out of every 100,000 population. This year 9,000,000 automobiles and trucks will be used. Last year there were approximately 10,000 deaths from automobiles. The increasing importance of the automobile as an instrument of injury and death is daily being viewed with great alarm by the electric railway industry.

The records of the Highway Department of Pennsylvania show that in 1919 there were 520,000 motor propelled vehicles of all kinds bearing Pennsylvania licenses.

Let us study a moment some accident statistics. A very elaborate study of automobile accidents in the United States was started by the late Captain Bullock of the Brooklyn Rapid Transit Co., in 1917 and carried to completion by Mr. C. B.

Scott, Manager, Bureau of Safety, Chicago, Ill., under the auspices of the Electric Railway Section of the National Safety Council. This study was based on 18,000 accidents with automobiles and electric railways over the United States. A few extracts from this report are exceedingly interesting. The country was divided into five groups with reference to the geographical location of the territory served by the reporting companies, namely, Eastern District, Central District, Southern District, Western District, Pacific District.

The following figures give the number of automobile accidents per million population reported as occurring during the six months ending July 31st, in each of the foregoing divisions into which the country was divided for convenience in making these comparisons: Eastern District, 13.87 per cent.; Central, Division, 20.59 per cent.; Southern Division, 18.60 per cent.; Western District, 36.17 per cent.; Pacific District, 25.85 per cent.

It will be seen that the Western and Pacific Districts lead in the percentage of accidents, with the Eastern District the smallest per cent. A brief arrangement of the prevailing cause of these accidents arranged in the order of their seriousness:

Pulled onto track in front of car (neglect of chauffeur),	18.7
Excessive speed (neglect of chauffeur),	12.4
Insufficient clearance (neglect of chauffeur),	11.6
Miscellaneous accidents not classified,	10.7
Other negligence of chauffeur,	9.6
Inattention (neglect of chauffeur),	8.2
Sudden stop by car (auto hits car),	6.8
Sudden stop by auto (car hits auto),	4.0
Disobeyed traffic rules (neglect of chauffeur),	3.6
Insufficient clearance (neglect of motorman),	3.5
Defective or slippery pavement,	2.5
Inattention (neglect of motorman),	1.7
Other negligence of motorman,	1.6
Defective or slippery rail,	1.2
Excessive speed (neglect of motorman),	1.1
Defective equipment of auto,	1.0
Defective equipment of car,	.1
View obstructed by snow, rain or fog,	.1

Sixty-four and two-tenths per cent. of all accidents received from all parts of the country are reported as occurring on account of the negligence of the chauffeurs.

The accidents and fatalities show:

	Killed.	Injured.
Congested Districts,	8.7	15.9
Uncongested Districts,	91.3	84.1

Touching for a moment the grade crossing hazard which is a very perplexing problem and one that will pass to the steam roads of the country for solution, it can readily be seen at a glance where this hazard is one of the great problems to be solved by a report made by the Southern Pacific Railway at two grade crossings. Seventeen thousand automobiles passed over these two crossings: 62% did not look; 2% looked in one direction; 17% looked both ways; 19% 3,230 automobiles ran wild.

The analysis of 20,000 grade crossing accidents involving electric railway cars and automobiles show that the electric railways were wholly responsibe for 4 per cent.

Let us look at the Highway Report of New York City for 1918.

Nature of Accidents:	Total.	Males.	Females.
Killed in Street Car accidents, ...	5,061	3,360	1,701
Injured in Auto accidents, ...	13,619	10,095	3,524
Killed in Auto accidents, ...	497	377	120
Injured in all accidents, ...	24,310	56% automobile accidents	
Killed in all accidents, ...	679	73% automobile accidents	

Report of the Public Service Commission of Pennsylvania:

Nature of St. Ry. Accidents.	Total 1919.	% Decrease 1918.	City of Phila. Electric.	City of Phila. Auto.
Injured, ...	3,068	2%		
Killed, ...	193	21%	86	166

Total Railway Accidents, 2,452, 13.51%.

Electric Railway Grade Crossing Accidents:

Nature of Accidents.	Total 1919.	Autos 1919.	Steam trains 1919.	Autos 1918.	Total 1918.
Injured, ...	115	36	72	25	109
Killed, ...	11	10		5	8

Total accidents, 53.

In these reports we find the average of those injured is between 16 and 50 years. those killed between 6 and 15 years.

We can but briefly at this time touch the accidents on highways and vehicular traffic; the field is enormous and requires serious thought.

Accidents to Pedestrians: The problems of the pedestrian is a most complicated one and there must be regulation of pedestrian traffic as well as of automobile traffic. Accident figures show how reckless many pedestrians are and how frequently they are ready to take all kinds of chances. Individuals who cross streets after the signal has been given for traffic to go in opposite direction, or crossing streets outside of safety lines. It is time pedestrians, particularly in the larger cities will realize that they also have obligations in the prevention of accidents. A large part of the pedestrian problem concerns itself with children, who are the most frequent victims of accidents. The "Jay Walker," the man that reads his paper crossing a street, the person that crosses between street intersections; the one that jumps in front of a fast moving car; the person who hides behind his umbrella on a rainy day are a few of the legion of pedestrians that play the most important part in street hazards. The education of children in the schools regarding the need of greater care while in the streets is to be encouraged. Extension of play grounds for children should be the watch word in every municipality.

An interesting study made by the Police Department of New York City exemplifies the gross neglect on the part of the pedestrian on the highways better than any other that has come to my notice. At 4th Avenue and 23rd Street, from 4.45 P. M. to 5.15 P. M., 924 persons crossed to south side of 23rd Street, going East and West, after traffic officer's whistle had given right of way to North and South bound traffic. At 5th Avenue and 33rd Street, 12 noon to 12.30 P. M., 610 persons crossed 5th Avenue, East and West, after traffic officers whistle had given right of way to North and South bound traffic.

I have but briefly touched some of the most important hazards of electric railways, each though, is a subject by itself. In looking over the field, we find that on the

electric railway one person is killed for every 4,393,572 passengers carried, and one killed for every 831,637 miles operated. The average percentage injuries and damages to total operating revenues of the electric railways of the country is 3.68 per cent.

The abnormal growth of our country has developed conditions for which we have been totally unprepared and could not be foreseen, the most prominent being the automobile development together with perplexing traffic problems has made electric railway hazards one of serious thought for railway managers.

I wish to briefly summarize the points which occur to me as being important in preventing accidents in the electric railway field.

1. Systematic education of our own employees.
2. Systematic education of the public at large.
3. Uniform traffic regulations and safety laws, and their rigid enforcement.
4. Proper training and licensing of all auto drivers.
5. Enactment of laws requiring the traveler on the highway to give due regard not only for his own safety but for those who entrust their lives to his care.
6. Prosecution of violations of existing regulations.
7. Continuous following up of all activities.

The safety propaganda is one of the greatest savings that can be brought about in the electric railway industry. It is sometimes difficult to show the individual citizen that he individually will be better off in his business and his home affairs for taking part in the cause of safety. The citizen should be appealed to primarily on the ground that it is his plain duty, if he wishes to deserve the name of free man, to do his full share in the hard and difficult work of convincing the general public that they must think, act and live safety.

Never before has the conservation of human life appealed so forcibly to the nation as now. The war has shown, as have other wars, that the winning power has been in the brain of man, in the love of liberty and justice. So in the great battle for safety, the winning power will be in the brain of the workers and the love for humanity.

MR. AINEY: Now, ladies and gentlemen, we will listen to a discussion of the Electric Company from the standpoint of Safety. I have the honor and pleasure of introducing to you, Mr. C. G. Rice, of the Pittsburgh Railways Company, Pittsburgh, Pennsylvania.

THE ELECTRIC COMPANY.

By C. G. RICE, Manager, Associated Bureaus, Pittsburgh Railways Co., Pittsburgh, Pa.

Paradoxically the electrical hazard is great because it starts with production, is present during distribution, and continues during consumption.

On the other hand, considering its almost universal use, the hazard is small. Safe practices and equipment early adopted and continuously developed has materially reduced accident probability.

Again the hazard is great because the resultant effects of careless handling is usually severe shock, deep burns or electrocution.

Contrarily employees, doctors and others trained in the prone pressure method of resuscitation, scientific application of ambrine and use of the dakin solution, reduced the effects of shocks and burns.

The mystery of electric power makes it dangerous for there is often present a desire to try it out. It subtly attracts the inquisitive and foolhardy, certainly such persons have unlimited opportunity to see what it will do, for they are constantly in touch with some form of electrical energy, they are transported by electricity, they read by it, their meals are cooked by it, it is vividly present in their amusements, and it is a business requisite of broad scope.

Years of experience and research, however, has developed a national electric safety code that is unusually complete and generally adopted.

Constant cautioning has generally informed men, women and children that a wire is not to be touched, and that it is a potential death agency, and the thing to do is to notify the company and they will fix it immediately.

Peculiarly, employees acquainted with its dangers are those most desirous of taking a chance with it.

Under normal conditions electricity is one of the safest of industrial, commercial and social elements; in the hands of the ignorant or recklessly inquisitive it is a death dealing agency. So long as no effective insulation of high voltage lines is found and wires and cables are erected in proximity to other wires, a grave element of danger exists.

Contrary to popular opinion only 2 per cent. of fires in the United States is directly or indirectly traceable to electric causes. Out of 200,000 fatal accidents showing a death rate of 80 per 100.000 of population, only 8/10 of one was found due to electrical causes. Out of 1,090 accidents reported to one large central station plant, electrical burns constituted 3.9, but this low percentage of accidents proves to be 43 per cent. of the compensation cost.

Perhaps some safety man has prepared a booklet of advice for the safe use of the current that is understandable to the average person. If so, all, old and new users should be supplied. More than ever electricity is being used in industries. Its present manifold uses are insignificant to the many new ways which will be found for its convenient and economical application. The diminishing supply of natural gas as a fuel makes prominent the use of electricity in furnaces and big scale manufacture. The time is fast approaching when every human being in the United States will be dependent in some way on some form of this powerful energy. Such persons must be educated in and prepared for its safe usage.

So much for the hazard of the Electric Company. I have never been able to think of accident prevention or safety work only as a local or unit necessity. Rather I picture it as a national proposition, affecting every human being.

The criminal waste of human life and power through accidents is strikingly shown in figures compilable since the Great War. During the 19 months' participation there were 50,280 American soldiers killed, and 205,690 wounded; during the same time in the United States there were 126,000 deaths due to accident, and approximately 2,000,000 more injured.

In 1917, 45,000 fatal accidents cost $557,289,000; it is estimated that the non-fatal accidents cost $1,671,867,000, or a total of $2,229,156,000, not including millions of property damage and the economic loss to the family, friends, employers and community. In Pennsylvania alone $31,000,000 has already been paid out by industry for fatal and non-fatal industrial accidents under workmen's compensation. Millions more paid in settlement of liability claims is not included.

These facts convince one that from any angle safety is more than an incidental hobby or experiment.

The Prevention of Accidents is: Worthy object, personal protection, parental indispensability, educational requirement, business necessity, dividend paying specialty, legal provision, criminal precaution, civic obligation, moral duty, natural trust, religious service, Biblical injunction, humanitarian demand, community accountability, State, county and municipal function, civilization debt, national tendency, universal urgency, labor union opportunity, paternalistic essential, capitalistic virtue, Socialistic contradiction, Bolshevistic opposite, syndicalistic antithesis.

While all of these are not yet a general safety habit. To make it so is our work.

Safety, it may be said commences before our birth and continues to our final resting place. It begins, or should, in the home, in the schools, at play, at work, and in public. Any community not having some form of active organized safety work is derelict in its duty. The National Safety Council is doing a splendid work, and is prepared to organize and foster such movements.

A skeleton outline of accident prevention applicable to any industry would show:

HISTORY OF MOVEMENT.

1. Fix blame for protection.
2. Discipline.
3. Mechanical devices.
4. Educational { 85% ed—75 to 90% preventable.
   10% mec.
   5% discipline.

CAUSES OF ACCIDENTS { Material failure.
Human failure.

1. Conscious carelessness.
2. Thoughtlessness or unconscious carelessness.
3. Ill health.
4. Dissipation.
5. Fatigue.
6. Worry.
7. Unsafe conditions.
8. Lack of instruction.
9. Mental dullness or ignorance.

THOSE INVOLVED.

Men Women Children	At home. On the streets. At work or play.

CLASSES OF THOSE INVOLVED.

Those who realize danger, but intentionally "take a chance."
Those who realize danger but act thoughtlessly.
Those who are unable to realize danger of accidental injury.

HOW TO ANALYZE YOUR PLANTS.

1. Kind and class of employees
   - Nationality.
   - Age.
   - Occupation.
   - Education.
   - Working hazards.
2. Nature of accidents and injuries.
3. Local hazards.
4. Facilities for reaching individual.
5. Keep the thought of safety in their minds.

ARGUMENT FOR EXECUTIVE APPROVAL.

1. Number, cost and result of accidents.
2. Reduction made elsewhere.
3. Preliminary plans for your plant.

FUNDAMENTALS OF SAFETY WORK.

1. Accident prevention is specialized effort.
2. It must start at top and work down.
3. It involves every department and all employees.
4. It is a staff function.
5. It must be persistent and continuous.

CAUSES OF LABOR UNREST.

1. Sickness or fear of it.
2. Accident disability.
3. Fear of unemployment.
4. Fear of old age.
5. Protection of family in case of death.
6. Advancement in work and earning power.
7. Education of children.
8. Earnings permitting marriage.
9. Desire to own home.
10. Working conditions—Job dissatisfaction.
11. Living and eating conditions.
12. Recreation and entertainment.
13. Labor agitation.

ADVANTAGEOUS INDUSTRIAL UNDERTAKINGS.

1. More efficient man selection
   - By psychological and other standard tests.
   - According to job analysis.
   - Medical examination.
2. Detailed preliminary instruction
   - As to Company's policy.
   - As to employee's privileges, opportunity and prospects.
   - As to facilities for his welfare
   - As to his partnership in business.
   - Wages and working conditions.
3. System of transfers, promotion and discharge.
4. Sick benefits, disability payments, death insurance, birth premium, medical attention and pension.
5. Give aid to home and food purchasing—why not?
6. Stabilize employment.
7. Make working conditions safe, sanitary and satisfactory.
8. Provide for vacations, recreation and entertainment.
9. Corporation schools to increase efficiency.
10. Encourage thrift and saving.
11. Provide free medical and legal advice.
12. Take interest in all community conditions affecting employees.
13. Develop a partnership interest in business based upon industrial Democracy by whatever plan best suited to the particular conditions.
14. Take an earnest, unselfish, practical interest in each employee at all times, not a paternalistic, but as a man to man obligation. Do not expect a bushel of thanks for a quart of kindness. Some men never forget a kindness—if they do it themselves.

Those employers with a sincere desire to benefit their employees will find numberless ways and means. A personnel relations department properly headed and supported offers a big investment return. It may not prevent strikes under present conditions, but will prove an asset in the future.

It is my opinion that labor will welcome a sensible participation in company affairs. Properly developed it will prove an amazing benefit. Only the selfish, unprogressive, misinformed employer opposes it.

I am not unmindful that business is conducted for profit. Sometimes big investments are necessary to secure small profits which grow into large profits.

All this is a man-sized job.

Sincerity is a vital necessity.

An argument for Bolshevism is that it can be set up in a day. We use our hands and our heads. Now is the time to add our hearts.

Activities such as I contemplate cannot be functioned in a day. It is a construction job requiring fine engineering.

Good ideas need time to ripen.

You cannot change over old ideas without much patience.

Self confidence is the fuel under the boiler of business.

When you have the desire to do and the conviction in you that you can do, you will.

The war has done much to promote health, safety, education, welfare, efficiency, co-operation and democracy. If the lessons so taught are accepted by progressive industry then the war has more than paid for itself.

MR. AINEY: Ladies and Gentlemen: I trust that I shall have the privilege of affording you a rare treat by extending your program.

Since your chairman has been sitting here and looking over this audience, he has noticed the face of a young lady, who by her entirely accepted title stands for all this Congress, stands for and particularly with respect to that portion of your program now under consideration.

Not very many days ago I heard the great Governor of our State and also the Mayor of the City of Philadelphia, speak in commendation of her work with respect to safety and I trust she will honor us by coming to the platform and saying a word or two to us concerning her own work. I cannot recall her name and it is not necessary to do so. Permit me. if she will, to call her—Miss Safety First, of the Philadelphia Rapid Transit Company of the City of Philadelphia.

MISS SAFETY FIRST: This is indeed a very unexpected but equally great pleasure; this opportunity of having to say a word to you. I feel it is an unusual opportunity this morning, but I thought it was due entirely to the standing I feel that I have always had when I came to this city of State Government.

Of course, there is always such a hearty welcome due probably to the men who create Democracy, men of whom the Commonwealth is justly proud, among whom are such men as our chairman himself. Mr. Spring has so splendidly covered the number involved in the accidents, in public utilities, besides many inherent hazards. Being a strong advocate of first impressions, it is the children to whom most of our serious accidents have occurred, and the Juvenile Court, of Philadelphia, believes it is just such a few years between the juvenile and the adult.

Schools offer the best medium. Story telling has awakened interest and motion pictures, blotters and story painting, and in order to excite interest in all the dangers in schools, we have organized safety patriotic boys who volunteer to supervise and in that way help the little children to form the habits of safety. Some one jokingly said about it, "Not on your life, Captain, not unless you can pound a few ideas into the fellows' heads when it is dangerous." But in spite of it all, last year we felt quite encouraged, for out of the number of children killed by trolley, only four were of the school age. Investigation showed that they had not been under the influence of the safety work.

There had been an increase in accidents surely, and now we are working on the better safety, and I am here to extend an invitation, and any time you are in Philadelphia I should like very much to have you go over this work with us. I thank you.

COMMISSIONER CONNELLEY: How apropos to have "Miss Safety First" to appear before us today. I have just left a meeting in a school house where there were hundreds of children witnessing lessons in safety.

Dr. Payne, of St. Louis, is going to lecture in some of the schools this afternoon and the safety lessons will also be repeated in the other schools.

The children are shown by acts just what this safety movement means and I am so sorry that some parts of Pennsylvania do not know what we are doing. "Miss Safety First" is going to tell us what it means to the children and then to the babies and what it means to protect the people in the City of Philadelphia and in the State of Pennsylvania and what it means to carry out the law. To carry out the law and investigate matters as she has and to support the proposition as she has, will help us to get somewhere with our Safety movement.

I do most cordially welcome "Miss Safety First" and thank "Miss Safety First" and appreciate most heartily the wonderful help and assistance we have had from Mr. Ainey today, and, also from the gentlemen who have rendered such assistance to us.

We still have a little more time and have been requested by the photographer to stand in front of the Capitol building at twelve-fifteen and have a picture of the convention taken.

We are going to publish these proceedings and they are going to be sent all over the United States and we trust that without any inconvenience, whatsoever, you will be able to await the taking of the picture. I want you all, everyone of you here, to be in this picture, because we have started our in a new way to obtain safety in the public schools and in different places of Pennsylvania and I trust that you will be able to read and hear of this convention in all parts of the United States. The people that worked against this movement did so because they knew not what we were doing. We were leaders before the war and did little during the war except in the line of production. Now we are working for the safety movement along entirely different lines, the education of children of the public, the education of the people in this country; and we want you all to be a part of this work. No matter what position you may hold, either in State or in Federal Government, we must have your help and assistance and we want your suggestions and we need you. I trust you will wait for fifteen minutes and stand in front of the Capitol building so that everyone may be in the picture. We need it to show character and person and to tell what these great men and good women are doing, who they are and whence they came.

MR. AINEY: Before we close this morning's conference, in my mind I think great emphasis should be put on all that has been said and done if we want to arrive at the right point. The value of the individual was never so much noticed as at the present time from the manufacturing standpoint. It has been mentioned in the newspapers through an economical standpoint and has been mentioned in other papers. Altogether we are saying that this program of Safety First, the safety program as we have been considering it, with respect to the individual, with respect to the utilities, to the great Congress and to the State Governmental Agency, that with these three factors, the individual, the employers of labor and great industries throughout the United States itself, the whole community, in a program of this kind very good results are foreseen.

It seems to me that Commissioner Connelley should be especially congratulated because of his thought in gathering us together on this occasion. He ought to be congratulated because of the success of this Conference, and you gentlemen, I am sure ought to be congratulated upon the interest which you have shown in gathering together and by your attendance and your willingness and your words, all those things which would make effective the methods and ways we have in mind. I thank you personally for the privilege which you have bestowed upon me through Commissioner Connelley as presiding officer for the morning session. The session will now stand adjourned until two o'clock.

TUESDAY, MARCH 23.

AFTERNOON SESSION.

CHAIRMAN: Thomas E. Finegan, Superintendent of Public Instruction.

COMMISSIONER CONNELLEY: The convention will please come to order. Late last fall, our friend, Dr. Thomas E. Finegan, Superintendent of Public Instruction, conceived the idea of having the educational people of Pennsylvania assemble here in Harrisburg for a conference. Dr. Finegan had worked very hard in order to bring the conference to a successful point, when along came "Mr. Flu" (influenza) and Dr. Finegan was very much afraid that pneumonia would develop. We were also afraid that we should not be able to have Dr. Finegan with us today, but I am happy to say that Dr. Finegan is here this afternoon. He is interested in the safety movement and is also interested in Americanization, in education and in humanity. I have had the pleasure of his acquaintance for a number of years and know exactly how he is going to carry out his work here in Pennsylvania, so far as the education of its people is concerned. Today, without even asking him to be chairman of this meeting I have done as he did with me and at least as the Mayor said I did with him. I "commanded him," because we are a big family here together and I feel sure that Dr. Finegan is always ready to do his part. I have the pleasure of presenting to you Dr. Thomas E. Finegan, Superintendent of Public Instruction, Harrisburg, Pennsylvania.

DR. FINEGAN: Commissioner Connelley, Ladies and Gentlemen: I want to thank you Commissioner, for having put upon your programme the subject of Americanization, to be considered for the afternoon session of the day. Americanization is a great educational project, and yet there are several departments of the State Government which come into close touch with this subject. I am gratified to say that I have had several conversations with our Governor Sproul on this very subject, and I have never talked with any man upon the subject of Americanization who has fairer views and a deeper interest on the subject than the Governor, and I have his assurance that the department which I have the honor to represent is to be given sufficient and ample means to organize and make effective a bureau on Americanization.

The Department of Labor and Industry, the Department of Agriculture, the State Department of Health are all departments which come in very intimate relation with this great subject, and I know that whatever is undertaken on the part of the State, I shall have the full co-operation of all the people associated with these great Departments. There are a few very fundamental principles which must be observed in an effective program on Americanization, and I should now like to see such a program inaugurated in this State that within a definite period of time, at least in the adult, illiteracy will be completely wiped out in the State of Pennsylvania. This is not at all impossible. It can be accomplished, and if the State sets its face to the problem, it shall succeed.

If we are to succeed, we must also know definitely how many illiterates there are in the State. We must know who they are and where they are. It will never be possible to effect the results we want to achieve unless we have this definite information. Now the National Government is just completing its usual census. The department charged with that responsibility has this information, and it should

be put at the disposal of the States. The National Government should supply each State in the Union with the information it collects in its recent census, showing the names of all the illiterates, etc., and the National Government will give us that information I am sure, together with any other data they may have, and the co-operation of other departments, and we shall be able to obtain the desired result.

That problem is not a State problem but it is a great National problem, and we might well say that the National Government should supply the funds to inaugurate the campaign to wipe out illiteracy in every state in the Union,—but if the National Government does not do that and if the State in which we live are not willing to put up their money and effect the organization and undertake the work, the least the National Government can do is to supply this record which it has in the National Government.

I said that Americanization was a great educational problem and the first great step in it is to teach the illiterates how to read and how to write the English language. We should not be at all satisfied in this Nation until every single man, woman and child who wants to be known as an American citizen can speak and read the English language.

Now while this is one of the essential features of the program there are other things very essential. We should utilize State school systems wherever they exist in carrying out any plant worth while, but we shall never be able to reach all the illiterates through our public schools. It may be the agency which teachers will be supplied so that those who may teach may organize classes in the factories and even in the homes. If there are those who cannot read and write nor come to the schools, then let us take the schools to them. Now I wish to say in addition to this that I am doubly interested in this problem, and we shall be asking the co-operation, not only of the departments, but I shall through representatives and personally myself be coming to the institutions which you represent in this Congress today. The first speaker this afternoon is a man who has devoted several years of his life to the study and direction of the problem of Americanism in Pennsylvania. He knows more about the subject in this State than any other man living, and it gives me very great pleasure to introduce to you Mr. E. E. Bach, Director of the Bureau of Americanization, Pennsylvania Commission of Public Welfare, Harrisburg, Pa., who will speak to you on the subject of "What Americanization Can Do to Aid the Industries."

WHAT AMERICANIZATION CAN DO TO AID THE INDUSTRIES.

By E. E. Bach, Director, Americanization Bureau of Pensylvania.

Ladies and Gentlemen: Americanization is the process of assimilation which guarantees the full functioning of American citizenship. This definition applies to the native-born and the foreign-born alike.

The recent world struggle forced upon our attention many facts which we had never known and which somewhat wounded the pride of every true American. Among these there was, standing out in bold relief, the fact that all persons disloyal to the stars and stripes could not be classed as "foreigners."

The reason for our chagrin was due principally to the fact that we could not bring ourselves to believe that disloyalty could exist among individuals who were born under the stars and stripes; reared in an atmosphere charged with freedom and brought to manhood's estate in an enviroument throbbing with the pulsations of liberty. The citizenship of the native-born, in this instance, failed to function.

Upon the other hand, however, while it may be true that 90 per cent. of the passengers on the "Soviet Ark—Buford," destined for Russia or some other foreign port, were foreign-born, yet it is just as true that 90 per cent of all the foreign-born, who live under the protection of Old Glory, are loyal to this great Republic and are not only willing to lay down their lives for the principles for which it stands, but have, since its very inception, given their bodies as living sacrifices in the cause of American freedom. Of this truth we need no greater exemplification than the authentic reports of the soldiers, in the recent world struggle, who won recognition for meritorious and exceptional services rendered. Were you to examine their records, you would find that, because of the unpronounceable names, these sacred sheets of American valor very much resembled the payroll of one of our large industrial plants. Every fifth man in the American line of battle was either a son of a foreign-born parentage or one generation removed. No wonder they were chivalrous even to the point of recklessness, for they were inspired by a double incentive to win.

First, to discharge their obligation, as American soldiers to Uncle Sam.

Second, to right the wrong suffered by their parents from the misrule in their fatherland.

The citizenship of the foreign-born, in this instance, functioned.

If the principles, which cost the lives of ten million human beings in the recent war, are to be preserved; if this great God-favored Republic is to remain in the vanguard of nations, as it should; if we are to justify to future generations the financial burden of taxation entailed by this great conflict and, if we are to profit from the achievements of the allied armies, then must we be, forever, vigilant and firm in our dealings with the vipers of unrest, discontent and disloyalty, which would menace the well-being of our beloved country.

I am not one of those who believes that any one hundred, any one thousand, or any one million people in this great country can finally disturb the equilibrium of this great Republic, however anarchistic their opinion, however revolutionary their ideas, however terrible their activities, or however destructive their bombs.

I am not of the sort, however, that would sit idly by and permit any one hundred, any one thousand, or any one million such hellish vipers to ply their nefarious business unchallenged. It is the duty of every self-respecting, liberty-

loving American to engage in a most intensive campaign of unadulterated pro-Americanism, in order that when the hydra-headed monster of distrust in American institutions presents its green, slimy head, that there may be a concerted action upon the part of the great American people to as effectually sweep it from the face of our fair land, as did our worthy Knights in Khaki sweep the sin of militarism from the face of the earth.

This nation is founded upon the great truths of the eternal God; its destiny is within His keeping and its mission will finally be fulfilled.

Therefore, I maintain that the initial step in any Americanization program, anywhere, shall be an intensive campaign for the fostering of patriotism and the cultivation of loyalty towards our government. This is an important phase of the Americanization program for the State, in which industry can profitably engage, for the mutual good of both the industry and the State.

For the purpose of getting a close view of the industrial Americanization problem, it might be well to note the succeeding stages which have lead up to the present situation. Ten years preceding the war, 6,000,000 unskilled workmen were recruited in the industries of our country, transforming this farming and agricultural country into the leading industrial nation on the earth. This is without precedent in all history.

Immigration reached the one-millionth mark in 1905. From that time until the outbreak of the great war, it averaged from three-fourths of a million to one and one-fourth millions per year. Four-fifths of the immigrants in factories are unskilled workmen which is only possible because of the invention of simple machinery which has supplemented the skilled workmen in industry. During this time of increased immigration, capital has increased six fold and manufactured products have increased three fold.

The mechanization of human work, through a most searching application of the principles of efficiency engineering, is responsible for much of the demand for the foreign-born workman. You are, no doubt, conversant with the facts, relative to the transformations constantly going on along this line in the various industries. Through this process the skilled workman was forced into the ultra skilled class while the common workman, through the invention of simple automatic machinery, has mechanically not only taken the place of the skilled workman, but has increased the output fold upon fold. By way of emphasis, permit me to quote a few cases acug this line, which were the subject of special study by one of our leading efficiency engineers in this country.

"Until recently, 50 per cent. of the slaughterers were master butchers in the large Chicago meat plants. Each could kill, dress, quarter and prepare the hide. The rest of the force were assistants. Today forty-four different workmen in succession perform this task on the animal. Standard operations are assigned to different individuals and, if any operation can be further sub-divided to advantage, it is done immediately." The results have been phenomenal. "In 1884, five splitters would get out 800 cattle in ten hours, or 16 cattle per hour per splitter. In 1894, under the new arrangement, four splitters got out 1,200 cattle in 10 hours, or 30 animals per man per hour."

Since men are apt to become restless under this method in some of the departments, Slav women have replaced men; this is especially true in the sausage departments.

A recent visitor to one of the larger meat plants relates his experience as follows: "A month ago, we stood with a superintendent in a room of the canning department. Down both sides of a long table stood 20 immigrant women; most of them were visibly middle-aged and mothers. 'Look at that Slovac woman,' said the superintendent She stood bending slightly forward, her dull eyes staring straight down, her elbow

jerking back and forth, her hands jumping in nervous haste to keep up with the gang. These hands made one simple, precise motion each second, 3,600 an hour, all exactly the same. 'She is one of the best workers we have,' the superintendent was saying.

"We moved closer and glanced at her face. Then we saw a strange contrast. The hands were swift, precise and intelligent. The face was stolid, vague and vacant. 'It took a long time to pound the idea into her head,' the superintendent continued, 'but when this grade of woman absorbs an idea she holds it. She is too stupid to vary. She seems to have no other thought to distract her. She is as sure as a machine. For much of our work this woman is the kind we want. Her mind is all on the table.' "

Let us now turn to the mining industry. You will remember the miner in the coal-fields was a skilled worker in the true sense. He handled dynamite, calculated his own timbering, under-cut the coal and worked on piece-work tonnage. The mining machine did away with most of the skilled pick-work and a machine drilled the holes which broke down the cut-under coal. The holes were fired by a specialized workman. This new work of tending the machines under a foreman is done largely by unskilled agricultural laborers from the Balkan States, who have never seen a coal mine. The skilled American coal-miner is rapidly deserting the Pennsylvania soft-coal region.

The glass industry furnishes another striking example of what I mean.

"In 1890, in a certain community in Pennsylvania, a glass factory was built and skilled glass-workers from Belgium, Germany and France imported. Very few unskilled workers could be used. Late in the nineties, glass-making machinery was perfected and was introduced into this factory. The machines simplified the principal operations so much that cheap, unskilled labor was immediately put at work. The Glass-workers' Union recognized the danger in this development and, in 1898, struck against the machine. The union was beaten, and, by 1904, every plant in the community had fully installed the machines. Italians, Poles, Slovaks and Russians rapidly filled the industries and now all plants are running as "open shops."

The United States Tariff Commission Report (1918) illuminates a striking phase of American large-scale production—without touch or aid of human hand an automatic machine produces complete one-dram bottles at the rate of 165 per minute. In the manufacture of beer bottles, one machine displaces 54 skilled hand-workmen. The labor cost is practically nothing. In the making of bottles by the hand method, the labor cost in 1916 was 57 per cent. of the total factory cost in twenty-six factories. The greater part of this is due to the high wages paid the skilled blowers. By an automatic method the wage of the skilled operative is a cost that is entirely eliminated.

This sub-division of processes demands not only a minimum of technical knowledge, but also a passive, stolid labor-class temperament. Against the dead, stupefying monotony of this work a virile laborer would rise.

Just how thoroughly industry is permeated by, what we are pleased to call, the foreign-born, can be best illustrated by the following: There are 85 per cent. of the workmen in the slaughtering and meat packing houses who are foreign-born; 70 per cent. in the coal mines; 87½ per cent. in the woolen mills; 90 per cent. in the cotton mills; 50 per cent. in the shoe factories; 80 per cent. in the furniture factories; 50 per cent. in the collar, cuff and shirt industries; 80 per cent. in the leather industries; 50 per cent. in the tobacco and cigar industries; 70 per cent. in the iron and steel industries; 50 per cent. in the glove industries; 95 per cent. in the sugar refineries; 80 per cent. in the silk industries; 90 per cent. in the refining petroleum industries; 66-2/3 of the workmen engaged in construction and maintenance of railways; 72 per cent. of the workers in the largest clothing manufacturing houses in the United States are foreign-born.

The work of Americanization in industry can best be placed under the department of human engineering or the department of human relationships. The field of activity is as inclusive as the realm of human industrial relationships, affecting the workman on his job, in his home, in his community and fixing his state and his federal relationships.

Briefly stated, Americanization in industry has for its purpose such a happy adjustment of human relationships—between employer and employee—through satisfactory working conditions and American standards of living—as will result in maximum production and minimum labor turn-over.

1. BY ADJUSTMENT OF HUMAN RELATIONSHIP IS MEANT: (A) Restoration of old-time relationship; When employer knew every employee; when employer visited in the home of the employee; when employer called employee by name, rather than check number; when employee talked matters over with employer, man to man; when employees spoke with pride of having worked for but one employer; when employee visited in the home of the employer; when employee stood with employer through adversity, as well as prosperity, and when employee and employer did business by the Golden Rule of American industry—the Square Deal.

2. THROUGH SATISFACTORY WORKING CONDITIONS: Pure air, good light, pure drinking water, washing facilities, toilet arrangements, safety, first-aid facilities, hospital facilities, and workmen's relief funds.

3. AMERICAN STANDARD OF LIVING: Comfortable houses, pure water supply, wholesome milk, sanitary conditions in and about the home, ample gardens, opportunities for recreation, church facilities, school facilities, opportunities for saving and investing, hospital facilities, and medical attention.

The extent to which industry is directly responsible for conditions necessary to complete industrial Americanization, is dependent upon its responsibility for the isolation of its employees from environment conducive to the rightful assimilation of the foreign-born employee. This matter must not only be considered in the light of the present generation of workmen alone, but also in the interest of future generations.

Upon the other hand, the foreign-born workman must show a higher appreciation upon his part, when native-born American throw off their diffidence and unitedly join in the project of translating the ideals of America in terms of good wages, decent working conditions, American standard of living, and the determined insistence upon the administration of the general economic justice to which this country entitles all of its people.

Specifically, he must then be willing to assume a definite responsibility for the stabilizing of labor conditions; he must then be willing to give an adequate day's work in return for an adequate day's wage; he must then be willing to assume a direct responsibility for production; he must then be willing to recognize, that while he has a right to work and that while he has a right to quit work, he has no right to paralyze an industry, which causes all the people to suffer, any more than a merchant has a right to profiteer upon the necessities of life.

Charles M. Schwab says: "It has been proved repeatedly that the Americanization of workmen has a stabilizing effect. It shows quick results in the reduction of labor turn-over and tends to create a spirit of co-operation among the workmen, which is impossible when they do not speak the same language."

Industry is the greatest and most reliable asset which our nation possesses in time of peace and in time of war. Industry must depend upon unskilled labor for its perpetuity. The non-English speaking workman constitutes nearly all of the unskilled labor. The vital question which confront this nation at all times is—

does the non-English speaking workman form a stable asset or a safe and firm foundation upon which to erect a structure so vital to the life of this nation as is industry?

Since all of the thinking in industry is done in English; since workmen must receive their directions in English; since all safety signs are printed in English, and since rules and regulations, concerning all plant operations, are written in English, it would seem to be a matter of first importance to see to it that the non-English speaking workmen be made industrially efficient, at least to the extent of making the working language of industry his language.

The first step necessary for the Americanization of the foreign-born in industry, then, is a working knowledge of the American language.

Among the assured advantages obtained through the teaching of English to the foreign-born workman are the following:

1. TO EMPLOYERS: Promotes industrial safety, reduces labor turn-over, increases industrial efficiency, stimulates capacity production, strengthens factory organization, eliminates race prejudice, establishes medium for team work, conducive to amicable relations with employees, fosters companionable interest, and reduces expense of operation.

2. TO EMPLOYEES: It guarantees promotion, is necessary for citizenship, is an incentive for home building, makes for contentment, assists in social intercourse, reduces the possibilities for exploitation, eliminates the padrone system, eliminates the dishonest boss, attracts personal attention of the boss, and guarantees human consideration.

It might be well to keep in mind the facts just stated, in view of the statement made by a leading efficiency engineer, as follows:

"The daily material loss in the United States, in unintelligence is $67,000,000.

"The daily material loss in the United States, due to industrial incompetency, is $50,000,000.

"The daily material loss in the United States, due to faulty assignment of work in industry, is $20,000,000."

It will be of interest to you to note some of the definite results obtained through a working knowledge of English provided for foreign-born employees:

"Eighty per cent. of the injuries received by our workmen were among the non-English speaking employees, although they constitute only thirty-four per cent. of the force."—Commonwealth Steel Company of St. Louis.

"Accidents in the plants have been decreased fifty-four per cent. as employees are able to read factory notices and understand instructions."—Ford Motor Company, Detroit.

"I should be afraid to estimate the aggregate amount of waste, each year, to this company through a non-English speaking operative failing to understand an order, with a resultant costly blunder. I have known a single blunder to cost as much as $2,000. There are thousand paid out for injuries, which may be traced directly to the inability of the employee to understand English."—Semet Solvay Company.

"For each 10,000 American-born workmen in a large steel plant for a period of eight years, 21 were killed, and for each 10,000 non-English speaking foreign-born, 26 were killed. The figures for the permanently disabled, 28 to 65 respectively, show greater discrepancy, and those for the temporarily disabled, 858 to 2,035, one greater still. Moreover, while from year to year, the frequency of accidents among English speaking decreased, it was much less affected among non-English speakers; and the average severity of the temporary disabilities was greater among the latter."—Federal Department of Labor.

"The results have been excellent and have made it possible to promote many of the foreign-speaking employees to more important and better paying occupations.

We wonld emphasize the importance of this latter resnlt as compared to the nsnal argnment advanced, that a knowledge of English makes the foreign worker more tractable, and we would also emphasize the great advantage gained by co-operating with the school boards in the matter, rather than taking the more self-snfficient attitude of supplying either volunteer or paid teachers from the company ranks."—General Chemical Company, New York.

"Four years ago the company organized classes in the plant for the instruction of English, the New York City Board of Education providing the teacher Fifty-five girls were enrolled in three groups, each one receiving instruction for three-fourths of an honr each morning, wages being paid during that time. Accurate check kept by the firm on the earning power of illiterate girls who attended these classes, showed a steady increase on their hourly wage earnings and also redneed the amonnt of snpervision needed, and the number of work instrnctors was dropped from fonr or five to two."—D. E. Sicher Company, New York.

The most illuminating information we have in regard to the relation of the lack of knowledge of English to accidents is that recently published by Director Van H. Manning, of the United States Bureau of Mines, in his last monthly statement of mine fatalities. He said:

"The inability to read and understand English places the foreign-born in danger of his life. The rate of accidents among the non-English speaking miners is not only greater in all the great mining district of the country, but the increased ratio is uniform in all districts. This demonstrates clearly that the inability to read warning signs, to comprehend fully the company's instructions and to nnderstand their foremen, places an unnecessary hazard upon the foreign-born.

"The figures show the difference in the rate of serious accidents in the mines among the English speaking and those from the conntries of Continental Enrope, almost entirely non-English speaking.

"In the Pennsylvania anthracite mines, forty-three per cent. of the employees are English speaking, and this number is charged with only 28.8 per cent. of the fatalities; whereas the other 56 per cent. snstained 71 per cent. of the fatalities. This is a comparative ratio of 699 to 1,268 against the non-English speaking.

"In the Pennsylvania bitnminons mines the ratio is 771 to 1,123, and in the West Virginia district, 790 to 1,424."

Mr. Manning conclndes his report with this striking statement:

"Had the fatality and injnry rate for the English-speaking American been maintained throughout the three groups, there would have been a saving of 716 fatalities and 900 very serious injnries, a strong argnment for Americanization and edncation of the miner."

Aside from the economic value of the knowledge of English by all workmen, it must also be considered in the broad sense of national good.

Ex-Secretary Lane, of the Department of the Interior, says:

"While no one holds that merely talking, reading and writing English is Americanization, yet, we are all agreed that there can be no national unity in ideals or pnrpose unless there is a sound common-sense method of communication throngh which may be conveyed the thonght of the Nation. All Americans mnst be tanght to read and write and think our langnage. This is a primary condition to that growth which all nations expect of us and which we demand of onrselves."

Theodore Roosevelt said: "The foreign-born popnlation of this conntry must be an Americanized popnlation; no other kind can fight the battles of America either in war or peace. It must talk the language of its native-born fellow-citizens; it must possess American citizenship and American ideals. It must stand firm by its oath of allegiance in word and deed and must show that in every fact it has renonnced allegiance to every prince, potentate, or foreign government. * * *

None of these objects can be secured as long as we have immigrant colonies, ghettos, and immigrant sections; aud, above all, they cannot be assured so long as we consider the immigrant only as an industrial asset. The immigrant must not be allowed to drift or to be put at the mercy of the exploiter. Our object is not to imitate one of the older racial types, but to maiutain a new American type and then to secure loyalty to this type."

Just as one language is the basis of security for the national life, so is oue language necessary for the perpetuity of our industrial life.

Just as inability to share in thought is the chief cause of weakness in our Goverument, because of its polyglot aspect, just so is inability to share in thought the chief cause of weakuess in the development of plans for industrial co-operation between employer and employee in plants where many foreign-born are employed.

True speaking, readiug and writiug the American language are mere tools of learning and opportunity, but, give to the foreign population of American an uuderstauding of the language of the American Goverument, the American Home, the American School, and the American Church, and you will have gone the greater part of the way in the solution of the Americanization problem.

That those who direct the large industries in this Commonwealth are interested in this propositiou was plaiuly shown by the dispatch with which they returued to this Bureau, industrial information blanks, recently sent them. The inquiries made related to the various humau relationships that could be tied into au Americanization program, through the medium of their own existing industrial organizatious.

Following is the general summary of the reports and it indicates the Industrial Americanization pulse of Pennsylvania. It may be briefly stated as follows:

UP TO AND INCLUDING FEBRUARY 20, 1920.

	Whole number of reports received.	Number of industries having Americanization activities.	Number of industries considering an Americanization program.	Number of industries not having Americanization activities.	Out of business, M. office, etc., but heard from.
Metal products,	317	236	19	42	20
Manufacturing,	75	40	7	24	4
Mines and quarries,	140	120	2	5	13
Clay, glass, stone, building and construction,	111	56	5	42	8
Textiles,	88	59	3	19	7
Lumber,	51	17	2	12	----------
Miscellaneous,	301	223	10	60	8
Totals,	1,063	751	48	204	60

A summary of the specific items included in the reports is as follows:

UP TO AND INCLUDING FEBRUARY 20, 1920.

	1. Metal products.	2. Manufacturing.	3. Mines and quarries.	4. Clay, glass, stone, building and construction.	5. Textiles.	6. Lumber.	7. Miscellanous.	Totals.
1. Safety and First Aid Training,	180	52	127	41	39	10	169	618
2. Service Department,	65	25	16	9	21	1	54	190
3. Employment Department,	139	47	37	24	47	4	103	401
4. Personnel Department,	36	22	8	6	16	------	53	141
5. Welfare Department,	103	25	40	17	26	1	77	289
6. Social Settlements,	19	5	11	4	4	------	16	59
7. Educational Departments:								
(a) Classes in English for foreign-born employes:								
1. Conducted on employer's time,	7	------	6	3	6	------	8	30
2. Conducted on employe's time,	44	5	7	3	4	------	12	75
3. Conducted on part time of each,	6	------	4	3	1	------	1	15
(b) Where conducted:								
1. In plant,	18	3	3	4	5	1	11	45
2. In neighbor school houses,	33	2	9	3	7	------	11	65
3. Elsewhere,	16	------	4	------	3	------	6	29
(c) Other industrial classes conducted:								
1. Apprenticeship classes for beginners,	36	14	3	9	23	------	47	132
2. Technical classes for employes,	35	3	4	4	8	------	25	79
(d) How conducted:								
1. By employers on plant,	44	12	4	5	21	1	52	139
2. In conjunction with public schools,	22	4	2	2	6	1	11	48
3. Under supervision of other organizations,	19	2	4	1	7	------	12	45
(e) Neighborhood classes:								
1. Sewing,	13	2	7	3	5	------	12	42
2. Cooking,	13	1	6	2	5	------	10	37
3. Canning,	11	------	10	2	1	------	6	30
4. Home nursing,	12	1	15	2	4	------	10	44
5. Care of Children,	12	------	16	3	4	------	10	45
8. Medical Departments:								
1. Company hospitals,	93	17	40	11	17	3	50	231
2. Company physicians,	104	18	74	26	21	3	90	330
3. Company visiting nurses,	47	10	25	3	13	1	37	136
4. Clinics for employes,	23	5	5	4	2	2	23	64
9. Housing:								
1. Do you rent houses to employes?	81	8	123	35	15	2	81	345
2. Do you sell houses to employes?	38	1	15	16	7	3	24	104
3. Do you advance money, for building houses, to employes?	40	8	4	10	14	2	31	109
4. What per cent. of the building price will you advance to employes?	28	8	10	8	9	------	24	87
5. What is length of time of loan?	28	7	11	7	9	1	22	85
10. Do you operate a workmen's retirement fund?	27	3	5	7	3	------	48	93
11. Do you operate a building and loan for employes?	14	3	4	5	3	2	15	46
12. Do you recognize collective bargaining with employes	53	16	51	23	25	3	65	236
13. Do you publish a company paper for employes?	38	8	2	5	9	------	40	102
14. Do you favor and assist:								
1. Employes' athletic activities?	169	36	82	19	43	6	145	500
2. Employes' band?	55	8	46	18	14	2	52	195
3. Employes' gardens,	71	12	82	29	24	3	68	290
4. Employes' community house?	24	3	28	6	17	2	27	107
5. Employes' play ground?	16	10	66	10	25	3	43	223

The final goal of Americanization for this great Commonwealth should be:

1. That every resident of Pennsylvania shall be a loyal English speaking American citizen.
2. That American standards of living shall prevail in every Pennsylvania home.
3. That there shall be a concerted effort to save the life of every Pennsylvania baby.
4. That there shall be a unified effort toward capacity production, for Pennsylvania industries, through the mutual efforts of employer and employee.
5. That there shall be operative, at all times, a program of constructive and patriotic loyalty throughout Pennsylvania.

The process of Americanization can only be accomplished through personal contact:

(a) Use every agency interested in Americanization for the purpose of forming personal contract with the native illiterate and with the foreign-born.

(b) Use every contact, thus made, as a means of teaching English to the native illiterate and the foreign-born.

(c) Use the English in turn as a basic for the full functioning of American citizenship in its broadest sense.

Then, through a united consistent effort of all individuals and agencies interested in Americanization; through a workable program along definite lines; through a proper evaluation of contributions made by the foreign-born to American progress; through a broad and sympathetic understanding of the common difficulties encountered in adjustment to new conditions, and through the general process of the fusion of virtues and the elimination of vices, there shall finally be realized the common basis for Americanization.

Then will it be possible to visualize that new liberty-loving composite, which shall symbolize all the ennobling ancestral heritage of patriotic struggle of the foreign-born, together with what is big, with what is helpful, and with what is inspiring in our national life and, as a result, there shall be born the most potential exponent of world democracy—the New American.

DR. FINEGAN: Dr. Bach has outlined a very broad and comprehensive program in his summarization of what can be accomplished. One of the great industrial cities of the world is our own city of Pittsburgh and we are fortunate enough to have with us this afternoon the Director of Public Safety of that city, Dr. Charles B. Prichard. Dr. Prichard will tell us "What Municipalities Can Do to Aid Americanization."

I have no regrets and no apologies to make to Mr. Prichard for having called him a doctor. I had understood from Dean Connelley that he had represented nearly every institution in Pittsburgh and when I looked at the program of the speakers of the afternoon I knew that I had never met Mr. Prichard. Mr. Prichard is going to submit to you this afternoon a very interesting subject and the subject is such that if he is not a doctor, he should be made one. I have great pleasure in presenting to you, Mr. Charles B. Prichard, Director of Public Safety of Pittsburgh, Pennsylvania.

WHAT MUNICIPALITIES CAN DO TO AID AMERICANIZATION.

By Charles B. Prichard, Director of Public Safety, Pittsburgh.

Mr. Chairman, Commissioner Connelley, Ladies and Gentlemen: I assume that most of you people live in communities where they have Directors of Public Safety or who have some other municipal official in charge of the public safety work of your respective communities. I also assume that being intelligent citizens interested in public affairs that all of you are more or less familiar with the situation occupied by the person who directs the affairs of the police and kindred organizations in your city. I therefore assume that all of you are familiar with the epithets which have been thrown at them. I, personally, in my associations have been called everything in the calendar, but today I have gotten a new one, when Dr. Finegan introduces me as Dr. Prichard. I am very sorry that the epithet does not apply.

I am, however, deeply grateful to the Doctor and deeply grateful to the Dean, too, to have the opportunity to come down here and to show my interest in this great movement of which you people are the pioneers. It would be presumptious indeed on my part to even try to put over any new idea in such a gathering, composed of most earnest, sincere and thinking men and women, who are as I have said, the pioneers in one of the greatest forward movements in the name of humanity—safety.

The very fact that you are here, gathered here in the cause that you are, stamps you as thinking men and women. We are abreast of the times,—and know what life of the present day means and are deeply sensible of the trained commercial values and the needs of the hour. I therefore will not in any sense attempt to advance any new thought, but will content myself in the discussion on the subject assigned to me in expressing old thoughts, old principles and accepted ideas with possibly a little different point of view. Americanization I assume is thoroughly understood by every person in this room and by the people of which the persons of this room are representatives. Americanization—we all understand what it is. It is one of the life wishes of the day, and how it is proposed to translate it from the ideality of thought and aspiration to the world of realities. If there are any in this room who did not have an adequate idea of what this proposition means and how it is to be brought about; there can be none now after the able and learned address by Director Bach, of what Americanization can do to aid the industries.

My task this afternoon I take it is not to attempt to add anything to what he has said; not to attempt to go into an analysis of the idea nor the reasons for its existence, nor the plans by which it is accomplished, but actual thought, but I take it I am called to discuss Americanization from a civic standpoint, and it is a real civic problem outside of being an industrial problem, and means a great deal not alone to our cities, and the State but to the Nation. This problem does not only comprise the foreigner who at first thought might be assumed to be the only one involved, but I take it, and I speak from my experience in handling affairs in Pittsburgh, that it touches closely half a million more American citizens of Pittsburgh.

This problem concerns in addition to the foreigner many, many persons who claim to be pure full blooded Americans. It confronts them just as much as it does the foreigner, notwithstanding the fact that they claim they are Americans.

Why there are people who merely because they speak the English language and know no other sovereign, think themselves American citizens. No. It takes more than that to make a real American, and it takes more than that thought to claim to be a real American. We expect and we want the foreigner to speak our language, but we want him to forget any political allegiance than that in which he lives today in America. We want him to understand and preach the fundamental principles which lie at the foundation of our American institutions, and we want him to devote himself heart and soul, loyal and devoted, as an American, to those principles, and is it too much that we ask that of ourselves of our own people.

If a young man or a young woman aspires to teach the rising generation further in the primary grades, is it not necessary that that person understands and knows how to read, how to write, and how to figure? How could a man who could not read, write or speak his language expect to take charge of a class of Greek or Latin in any college? How could a man who did not understand how to operate an automobile expect to teach the novice in the art? Therefore, if we, as American citizens and as people proud to claim American citizenship, are going to say to these foreigners, "We are going to make American citizens out of you," it is up to us to do more than really claim we are Americans and English speaking people and having lived under no other sovereignty? Is it not well that we practice what we preach. Take an inventory of ourselves and see whether or not we properly preach and understand our American institutions and the principles which they are founded upon. In all our lives we meet problems which we are at a loss to know how to handle; things we do not know how to do, regardless of how well we may some times think we can do.

Now, this brings me to the approach of the Americanization problem as a civic proposition. Municipalities can aid Americanism immensely provided they exert themselves in their official charged with the administration of their affairs, and also the citizens constituting the municipality prove themselves as closely as is humanly possible to one hundred per cent. efficient in the experiments of the rights and privileges and of the performance of the office of the citizens of that municipality.

During the war we had a great example of what can be done along those lines if there is sufficient urging. The time is too recent for me to dwell in detail upon what state of patriotism there was, not only to the Nation but to the State and sub-divisions, was attained at that time, and it is devoutly to be wished now that the war just over, that same magnificent spirit would take place and inspire us to devote one-tenth the time to solving our civic proposition what we devoted to the one hundred and one war activities. We are all Americans and we are all proud to claim to be Americans. We are all Pennsylvanians and we are all proud to declare ourselves as such. But we are also citizens and residents of smaller groups, of smaller territorial districts, having a local self Government. These are the municipalities of which I speak.

If we are thrilled with the idea that we are American citizens; if we are all thrilled with the patriotic devotion to Pennsylvania, then we ought also to feel the same thrill of local price in the municipalities under which we live, because if we are proud to be a part of a great Nation, and if we are proud to be a part of one of the great States of that Nation, then we ought with the same loyalty and devotion support the local municipalities to which we are a part. Otherwise the State and the Nation will crumble and decay in the super structure. I primarily believe that the local municipality is the key to the many problems which face the State and the Nation. I believe that because that would be proper devotion and loyalty to our local division whether it be a township or a borough or a city, we are classing the State and the Nation at the root. We are invigorating,—we are

giving it help which will be sucked up through the trunk and will bear fruit in the branches which go to make up the beautiful blooming tree. What I have said here particularly applies to a city. I take it that a city is one of the greatest instruments of Government and sub-divisions of America in working out its problems, along this line as well as all other problems of National importance. Some obsolete writer whose name was not ever mentioned in the article described a city as "human life crowded to its most glorious experience"; it is a powerful magazine trying to test the ablest men and the best things; there all things are raised to their highest degree. Shortly is there concentration in a rich soil and it blooms forth into great streets and buildings and parks and works of art. Human character there attains its fullest and finest development and shows forth in its greatest beauty. Great cities have there been since before civilization; cities of government and commerce, literature and art. Rome was the mistress of the ancient world,—Athens of Greece,—Paris of France.

Alas, human sin also reaches its greatest depth in the city. Amid its abounding wealth and luxuriousness the direst most awful poverty exists. Its cleanest streets stand close to its slum, and under its splendid robes are the most hideous forms of evil. There in that description is presented for us the spirit of that complex agency which means so much in the solving of our problem and the solving of Americanization through its municipalities, because notwithstanding the fact that this great State of Pennsylvania has done what it has to further this great idea of Americanization, and notwithstanding the fact that the able and eminent men such as the Dean, Dr. Finegan, and others have this State problem in their charge, and notwithstanding the fact that the organization directed by our able Mr. Bach, yet in the last analysis what comes closest home, whether he be American or foreign, then it is the Government of the city in which he lives. Many of these great problems will have to be worked out through the city, by calling upon the city as an instrument and agent of the city to work for it.

Therefore, I say, our cities are the most important factors in our Americanization problem. Education takes place in the primary crowds but our great public schools are part of the city. Housing conditions,—factory conditions. Yes. All those things that have been suggested here. But there is a greater and just as important a factor, and that is how these people at home here whom we are trying to Americanize; how will they and how do they look upon the community in which they live today? And it is a most solemn duty that every public official sees to it that he functions as a true, patriotic, disinterested American, not only in his effort to help to Americanize, but also in the working out of the very great problems which we have yet to solve. Not only is the public official charged with this duty but each and every individual citizen worthy to be an American also owes it to his city and State and Nation that he so conducts himself to his city whether large or small, that he contributes his part in working out this part of Americanization as well as all other great and small problems. He should not be content merely by claiming that he pays his taxes and maintenance way; it is his duty to take interest in all public affairs and see that the officials do their bit, but do not leave it all for the public officials to do. Why and how does it apply to Americanization.

If you have a beautiful city, well lighted streets, good water, parks, beautifully planned and maintained, is it not going to be an object lesson to the foreigners; that it means something, in fact a very great deal, not only to come over here an immigrant, but to be Americanized,—and live in a community of that kind. Now one thought more; you must, if you are going to develop this foreigner, I care not whether it be a large or a small city, a township or a borough, you must first see to it, and it is your solemn duty, not to leave it to office helpers, but to make it

your own personal duty that vice, crime and sin are eliminated as far as is possible from your city. Do not leave it all to your public officials to ferret these things out and stop them, and do not allow your officials to sit idly by, looking on and permitting these things, with their eyes shut to conditious.

Because vice and crime are bad they ought not to exist. Of course it will always exist, but it must be minimized to the last degree. Fighting vice and crime is justifiable, but there is also another great good to be attained. By keeping this down, you are going to cleanse the moral atmosphere in which you and your children live aud work and develop, aud you are going to get in America the clean moral atmosphere in which to live. And I believe the plant of Americauization will do better in a clean moral atmosphere than one contaminated by vice and its tolerance and even by its protectiou as it exists iu some muuicipalities.

I might go on to a great length as the Director of Public Safety in Pittsburgh and mentiou instance after instance where the municipalities can, by functioning to their most efficient extent, help in this Americanization, but I believe what I have said will suggest to you what can and ought to be done by municipalities and citizeus of municipalities in aiding and forwardiug the grand idea of Americanization being discussed here this afternoon. I believe that each and every citizen of the municipality of the State and of the Natiou in order to be a factor in converting these people who are so necessary to our industries and who will be so much when they are Americanized to our country and that will be a valuable addition to our citizenship, I believe he owes it to himself to revert to the fundameutal principles which were handed down to him by our forefathers; to brush up and take stock of himself and of his duty to his city in its true force of patriotism that we feel periodically toward our city. But the city and town and borough is just as much a part, and entitled to as much as anything else.

I believe in solviug your city you are solving your Nation and you are true to your forefathers who speak to you and to your conscience just as much as if you were again calling the people of the United States in order to form a more perfect uniou; to prove that the common advance forms the general welfare, or to origiuate the Constitution of the United States of America. To do this you will have to keep in mind the spirit which actuated them, and if you imbed that spirit you are going to make the municipality, be it a borough or a city or a township, you are going to make it au effective factor and if the American people successfully and properly work this problem out, they are going to work out the other great problems and show that we appreciate Americanization for ourselves. I thank you.

DR. FINEGAN: The Y. M. C. A. has been a great factor in educational work and in Americanization. I know of many communities in the country in which the Y. M. C. A. has taken upon itself an obligation which should have been borne by the public school system of that community. In many other commuuities it has well supplemented that work. We have with us this afternoon, Mr. F. H. Rindge, Industrial Department, Y. M. C. A., New York City. Mr. Rindge tells me he is not a doctor, but he represents the Industrial Department of the Y. M. C. A. of New York City. He will first speak to you upon the subject of "Making an American," and after he has spoken to you on this subject he will give you a practical demonstration of "Making an American." It gives me great pleasure to present to you, Mr. F. H. Rindge, of the Y. M. C. A. of New York City.

MAKING AN AMERICAN (PRACTICAL DEMONSTRATION).

By F. H. Rindge, Industrial Department, Y. M. C. A., New York City.

Ladies and Gentlemen, Commissioner Connelley: You all know about the Black Hand Country, the threatening letters, saying "If you don't meet us at a certaiu place tonight at eight o'clock with five thousand dollars we are going to kidnap your child" and so forth and so on, but I think and am sure that after the splendid addresses we have listeued to, there is little that one can add. I know by this time you are firmly of a mind that you are going heartily into the Americanizatiou problem, and I am heartily in sympathy with this movement. By this I mean our Americanization, because the Americanization movement is bigger than any other organization. And when one tries to talk about it and gets down to brass tacks he feels like the man in the country grocery store who fell into a barrel of molasses. Some one asked him when he pulled himself out, how he felt, and his reply was "Oh for a thousand, thousand tongues to do the subject justice," and that is just how I feel under the circumstances about the Americanization problem. Fifteen thousand foreigners each year,—twenty million men of foreign tongues need what the problem is, but the question is what are we going to do about it?

I thought I understood something about this subject after ten years' experience, until I went into the service and went to thirty different Army camps to try to help teach the language to these poor unfortunates. In one of the camps where I was there out of two milliou men two hundred thousand who could uot read English—about a tenth of the whole number, aud that is about how it is or was with all the Army camps. I recall one instance, where this foreigner knew nothing of English uor what his enlistment had meant, and after being around the camp all day, uot really knowing what was going on around him, he rushed into the captain's desk, and said in great excitement "Pass me my money, I am going home."

We have a wonderful work right here among the foreigners. They know neither what we are saying or what we are doing half the time. After class oue night in the camp,—one of the Army camps, the lieutenant in charge called me over and said, "Do you see that fellow over there iu the corner, that Italian? Well, he is one of the finest soldiers we have in camp and if you can just manage to teach him the English language he will be the best officer in the entire regiment. And that is the situatiou in American industry today. Some of these men would be great powers today if they had what they have not got, and that is an insight iuto our mode of living—our language. And we should realize, too, that it would be tremendously valuable to us too, if they did, and some times we are very apt to forget how much these people bring to us, and we think ouly of what we do and what we can do for them rather than what they do and can do for us. There was one in particular, an Army Camp, where I told the captaiu I was anxious to see just how he instructed the men, and so this colonel iuvited us to go in and see how he was giving instructions.

I noticed that even for good American citizens it was quite difficult at times to understand just what was iutended wheu orders were given. Unless you did "follow the leader" you were never sure, and sometimes not eveu then. For instance a nail had to be put at the foot of the cot, had to be driven, aud only certain ones could be visible, and the bed covers, comforts, had to be tucked in a certain way, and a thousand other things just as simple when you know how, but to a novice, very complex. And while he was giving these orders I turned around and saw

twelve foreigners just back of us, still in civilian clothes, and from the slums of Chicago, and they were the very men who had to put into practice these orders. If you had to face this situation personally, you would appreciate more than you do, just what this means, and the most remarkable thing about it all is the remarkably quick way they grasped those ideas, and became some of the greatest values in the American Army.

A great many other illustrations could be given from Army life, and I give these few to make clear the point that the service of these men in the war has given them the right to citizenship, and in spite of the work in the Army the men have been granted the full rights of citizens without having any sense of the duties incumbent upon them, and we have some of them here this afternoon. I was reading in a subway train in Boston recently about the millions of Lithuanians, Jugo-Slavs, etc., in fact all nations; what they grow, etc., and it struck me very forcibly how strange it would have looked five years ago; putting this out in the subway trains, the foreigners in this country, taking for granted that we are tremendously interested in them.

A few years ago I was walking a mile with a group of volunteers, and all of us going to teach a class of foreigners, and at the end of a half mile we reached a box car, in which there must have been half-a-dozen different sects—the type of box car we generally had for a school—one wherein you found the firewood, stove, commissary department, and about everything you could find anywhere, and at the end you found sleeping bunks about three deep. Well, none of them knew our language, and yet at that, after an hour's instruction these men were able to memorize the entire first lesson—all of which you do not believe. And after the second lesson, this is what they found. Instead of a topsy-turvy place, we found clean newspapers, the stove had been blackened and two of the men had on high white collars, waiting for their second lesson. Their mode of living and their ideals had raised over night. Two men with the true spirit of Americanization have gone down there to serve. The future for this work is bright and we have every right to optimism on this subject.

I was in Minneapolis recently, and in walking over a bridge over the Mississippi I saw what was called "The Bohemian Flats," and while you find the city is full of them, you could not have found one who was Bohemian. The very term is an insult to the meaning of Bohemia, and yet we cannot say they are all foreigners. They are not by any means. The illiteracy of the Bohemian people is only 1.7 per cent. South Italy 54 per cent. and Portugal 64 per cent. That is one thing of which we must remind ourselves at the off-set. I am going to mention to you some special methods. We have discussed Americanization and citizenship from many phases besides teaching the English language, and they are all stepping stones to the larger program in service.

The man must be reached in an all around way, physically and socially and economically and morally as well.

Americanization is not only a case of education, but in a thousand and one ways. The foreigner should have protection, proper housing, proper environment, and then we will really and truly Americanize him and not before. Teach him the English language if you want him to become an American citizen. It is amazing to think of what the Italians have done, and to think of their wonderful patience and perseverance. Once in Vermont I had a class of Italians, and as the class broke up an American standing by me asked if I knew who the last Italian was just leaving the room. I said "no," and he asked if I ever went to Washington, and had I noticed that wonderful statue just outside of the capitol. Well, that poor illiterate Italian was the man who had done that wonderful carving. He had been in America for eight years; could neither read nor write our language, and yet what

a wonderful asset such a man as that would be to any commuuity. Our own organization had been sleeping, aud nobody had started a class for citizenship. There are many other similar illustrations.

In Iowa, I went to see the Bulgarian king of that colony, and when I got there he invited me into his back parlor and iu about five minutes I found out that he spoke fluently twelve different languages, while I stood there with only half a knowledge of one language. "Why in the world don't you go out as a linguistic interpreter," I said. He paused a moment and then looking me straight in the eyes said, "Because all of these nationalities need me, and about half of my time is spent in protecting them from American graft." After talking to him a while I referred to the war; Bulgarian aud Balkan War, and the Bulgarians fighting the Turks, and I said, "What would you do if a Turk should move here?" "Well, if they do," he said, "as far as I am concerned, I would open the door of my house aud let them live with me, because I feel that one natiou is as good as another. The trouble with you native Americaus is that you shove us iuto a corner by ourselves aud call us a problem."

What is your answer to a challange like that? We went down and tried to permeate that colouy with classes and clubs; going to them and not waiting for them to come to us; into back rooms of saloons. It would be hard to do that, now, however.

We should give more lectures. In the city of Chicago, on our Young Men's Christian Association program, we have five hundred thousaud foreigners each year attending our lectures so that they can all learn of the care of their families, etc. Possibly more clubs and pageants would be helpful. Some of the most interesting parts of our great pageants have been given almost entirely by the foreign element in our midst; the legal aid and advisor made up of lawyers and doctors to help those people in assistance and advising; health and hygiene and first aid lessons; recreation centres are necessary. Lots of them do not even kuow how to play. In one recreation centre I have seventy-five of them, and twelve different nationalities, and they were all more than eager to learn our American games.

And the possibility of athletics. In one city I visited there were nearly a thousand foreigners in various kiuds of athletic meets, aud you can imagine what it means to them, and in this program let us not forget the children. I wonder how many of us realize that the problem with the children is three times as hard as that of the parents. The answer is easy as you know, because we have those foreign colonies and many are brought up in eoutact with foreign American childreu, entirely illiterate, and that reminds me of the story of the little Italian crying ou the ear, and wheu some man asked him the trouble and he said his dad had licked him, the man told him uot to cry. He said, "I don't mind the licking, but I hate to get it from a blamed Dago." This is now a universal statement.

The children know so much more about the lauguage than their parents, that it is a challenge to us for service every day. I once met a boy living out in a stone hut with seventeen other foreign boys who worked iu the nearest plant, when they chose to work, and we asked him about the rest of the crowd. He said, "When we don't feel like working, we go out and swipe something." Well, we got a college athlete aud he was their leader, and uext we interested the Boy Scouts in them, and many other illustrations could be given.

Then the shop residents. The shop socials. There are now 50 per cent. more now than ever before. Shop socials are the first thought in improving the personal relationship. Then social influence. There should be an orgauized force for the visitiug of foreign homes. They should be called upon in the slums—not to cultivate

intimately necessarily, but to become acquainted the same as you would call on any one in your own community. And the possibilities of character building. And I believe we should begin our work with these given points: Industry, commerce, and self dependence, confidence, character building, and one of the five elements of success of your own industry—money, materials, machinery, merchandise, men and women. The human factor, and so much of that is foreign. Economic activities. Thrift programs are worth while,—saving, lectures against wasting. During the war as never before we recognized this need, and our task will not be complete until we have instructed these people in the lines of progress.

Dr. Vincent demonstrated to us that form of Government in which every individual has a maximum opportunity to show the best of which he is capable. It is surely time that we really get this conception of democracy by giving every individual everywhere the maximum opportunity of expressing the very best of his ability. This will not be done by education alone, but by inspiration; that is the personal human touch. Some times we are apt to forget in our legal work the personal human touch with this man and this women which means so much. That is what counts most after all with all of us.

It is just as necessary in life as it is in the moulding of pottery. There are three distinct ways of making pottery; one is mechanical; another process pouring the moulten clay into the mould, and in one case after the piece of pottery had been given over to be moulded I saw this man, as illiterate as he was, with his own hands, place a thumb into that lump of clay and in a moment there shaped up one of the most beautiful vases I ever saw in my life. And the very reason that it was so perfect was because it had that personal human touch, and that of course raises the whole problem of illiterates. In one place there was an Assyrian in a railroad shop class where I was, and the man who had been teaching that class, had his hair brushed very straight back. We left the room for a moment, and when we returned just three minutes later that Assyrian had his hair brushed exactly the same way. Those fellows illustrate by this that with the opportunity they would be looked upon as ideal Americans, and they are immigrants in far more important ways than this, and there are many more illustrations which with more time I could give you.

In Pittsburgh, at the Western Penitentiary, I went there. The class had been going for several weeks. One of the men said to me, "This is the first chance I ever had to learn English," and that man had been working long hours and had never had the time to go to class, so we had to take the work to that man and not expect or hope to bring them to us. I want to remind you of this fact. It is not entirely the work of any one organization. I believe that we will never solve the Americanization problem until we all get together, each with the earnestness and intent to do his or her part. The Young Men's Christian Association felt this and for ten years fought for a world-wide movement for Americanization.

In the second place we had men in the storage of all the ships teaching them to become citizens, and then we had met at Ellis Island dealing with the foreigners as they came over, and giving them instructions as to what they are to expect. Its form of Government; its interpretation of the cities in which they are going. We try in every possible way to assist,—to teach the foreigners. Our work in the plant must be done in three ways; either at the noon day hour on the company's time, which realizes that it pays them, or else after hours.

I have just come from the General Electric Company plant, where we have an Americanization section, and within a few months, they started a class of twenty-five men who are taught twice a week for an hour immediately after they quit work, and the teachers are volunteer teachers. So many places hold their classes at lunch time, and the men are in their leisure hour can volunteer as teachers.

Then I might remind yon of the other thonght. That all this thing pays in many ways, in dollars and eents as well as from a humane standpoint. I was in a plant the other night when the force had gotten together to launeh sneh a program and they were absolutely solid on the proposition and were ready to help, and they knew very well that the men themselves wanted this class. We can never use force. So we held there a dinner conference of five hundred and twenty-five men out of that plant, fifty of whom were teachers, the rest being everything else. They were giving a demonstration. Every one there was a volunteer worker.

I was in a plant the other day where the general manager said that the result of a program of that kind had decreased his expenses 47 per cent. and the output per man employed had increased 13 per cent. The president of the Allis Chalmers Automobile Company has had wonderful results, so he tells me. And at Newport News, Va., the Newport Shipbnilding Company, where we operated, we had the negro problem confronting ns, and his men were able, by working the same number of hours with this program, to drive 500 more rivets than ever before, completly rivetiug three ships in a year which could not otherwise have been ontfitted.

May I not point out that we will never solve this problem in the strategic until we move the eolleges nearer to the institutions. I have had the privilege of visiting about two hundred eolleges and universities. We have abont twenty-five hundred students who are reaching abont one hnndred thousand men and boys. We are putting in the class on the hnman side of people in the eurrieulum. We want to do like Tad Jones, the great Yale football player. He went into the service and he said that in the camps he tried to make himself oue of the fellows to the foreigner as well as Americans, and that the foreign boys were so appreciative that instead of feeling toward them like dogs, we treated them as man to man, and these fellows have gone out of their way many times to say "goodnight" to me, and, said to Mr. Jones, "We want to thank you for the sqnare way you have treated us."

We have such a number of similar experiences. At a eopper ranch iu Miehigan a man eame for miles to shake hands with me, beeause I had shown him how to teaeh the English language to foreigners. He is a superintendent, and one of the finest mining experts in the conntry, and not having labor diffieulties beeause he was fair and square and knew how to deal with the foreigners in that mine, and as we talked together, he said that he now knew the human side of it; has now graduated at the university. Before making a leader of any one man in a plaut, it is most important to know that he is the right kind of leader. And we will never accomplish our one great purpose nntil we go with a microscope in one hand and a teleseope in the other, that we may see in the air the evils that surronnd the air and do onr share in eradicating them.

We need a bigger vision. Not long since I was in a large observatory, talking to one of the men, and he had a teleseope. He said, "Look np through the dome." and I looked and said, "I am sorry, but I eannot see a thing," and he said, "Yonr tronble is that yon have not got the right ont-look." I looked through another teleseope lens, and saw millious and millions of stars, and I believe that is the kind of vision you and I want on this job.

Now I am going to take just a few minntes more. We have here a gronp of men I have never seen before, and they do not understand a word of English. They are from the Bethlehem Steel Company, and we appreciate their company and the courtesy of the company in sparing them to us, and I want to say at the outset that we are not advertising any particular method of teaching. This demonstration will be exceedingly difficult under the eircumstanees and I am going to ask your very kind consideration. We use the Roberts Method, bnt as I say, we do not recommend any particular method. We nse merely the elementary phase of that method. Mr. Roberts, the originator of this method, has never made a single

penny from it, and he never wants to, and any good method is about as worth while as Robert's; by hearing the language spoken, and not learning it out of books is the whole story in a nutshell. Remember that side and interest him.

Then we have built up a trend of thought, and he has been hearing the language spokeu at the same time. The second principle is that any method is built up on the lines of every day common sense in every day life. And third, it is very important not to isolate scientists. Continuously train the thought so that each scieutist, according to the laws of physical association, shall know what the scients should be. The first lesson is getting up in the morning and lighting the fire, getting table utensils together, etc.

The leader was performing certain actions, and as he took his drink of water he pointed to Joe and said, "He drinks the water and then he took out his watch and looked at the time and then he pointed to table to demoustrate as he called it a table. Now, you will see how he demonstrated getting up in the morning, and the second series deals in the working life; goiug to work, and working until he comes home and you can easily add special lessons in iron and steel, etc. The third series is on commercial and social life such as buying and selling, investments, buying house and lot, etc. That may sound impractical, but those are the elementary lessons, and then we build in a series of readers numbers one, two aud three, advanced instruction, and we continue this advanced instructiou until the men acquire citizenship.

I have uo doubt there are other methods just as good as these, but we want to describe to you how we go at teachiug an elementary class in Euglish. One or two hours a day it ordinarily takes to cover a complete lesson, and that includes the memoriziug of the lesson of reading of it perfectly well, the copying of it just right once in class, and most of the copying is done at home aud just a little grammar, and that same grammar for several lessons, and then a review at the end.

Thirty lessons get over six hundred words. Query: How old do you have to be? That is hard to say. It depends on the pupil and the amount of pep the individual puts in his teaching. It depends both on the principal and the pep of the teaching. It it more difficult to instruct the older meu. But do not understand that I believe that when a man gets old he cannot learn, because we have had actual experiences to the contrary. They are very anxious to get their knowledge and in some cases are very successful.

Query: Are there schools in the mining districts? There are some schools in the mining districts, hut not nearly as many as there should be. Lots of plants and schools use this method that I have just explained. But speaking of older men having difficulty in learning aud yet struggling with the language, I had a funny experience some time ago. I had a class of foreigners,—most all of them older men, and I had one shift coming off from work and going on to work, and I found that one of the men had written the lesson completely in that hour's time. I questioned, and finally found out that he had gotten hold of his little boy, and he had helped him to the extent of writing it for him, and the kid was tickled to death, and so he ought not to be a Bolshevist.

Query: Do you ever come across people who do uot want to learn? We have not had so much of that. They do not care how hard they work, and we do not care how hard they do waut to pull away because we believe English plus the ideals that go with it will offset all their other ideals. This is the first lesson, and you naturally wonder why we do not start with the alphabet. Our experience is, that it is just our opinion, that we had hetter teach him the words first and let the man learn the alphabet later. The alphabet discourages them, aud it does not meau anything to them. That is their every day language, but a whole lot of lessons on a, b, and c discourages them. We think this lesson is the most elementary

lesson we can teach. We do not know whether you believe it or not, but I believe in one hour every man in this crowd could learn that lesson. I have proven it in about six hundred similar instances.

Query: Where can you get it?

It is published by The Associated Press in New York, three hundred and forty-seven Madison Avenue. If you write and ask them, they will be glad to send you their circular. Dr. Roberts does not sell them as a money maker; it is sold at cost. Ask for "Circular of English for Coming Americans." We have some material here, and we have ten different lessons on a pad, one of the series is for beginners, and the other is for advanced readers, and in addition to the chart, we have a game called "Conversation Cards," which is most helpful. The teacher has a card, and they play by the teacher asking questions and the pupils hunt out the answers as for instance, the teacher will ask "How do you go to work?" And the answer is given by the pupil; so that they converse and learn to talk intelligently. And there are many other methods as good as this, and any other questions that you would like to ask after the sessions, I shall be only too glad to answer. I thank you.

COMMISSIONER CONNELLEY: There will be a meeting for women this evening and each woman has a message that is really worth while, and I trust that you will come and hear them. If the time will allow, we have some new films on the mining industry that have never been shown before. We would like to have you see those films, as I think they will be most interesting. We would like you all to be here this evening. The meeting now stands adjourned.

TUESDAY MARCH, 23

EVENING SESSION.

CHAIRMAN: Mrs. J. Willis Martin, Philadelphia, Pa.

MRS. MARTIN: Mr. Chairman, Ladies and Gentlemen: When we consider that there are eleven million women in the United States engaged in occupations, it seems right that today when you are considering the work of the people in industry that the women, some thousands in Pennsylvania, should have a part in this program on safety, here in Harrisburg.

Miss Mary Anderson, of the Women's Division, United States Department of Labor in Washington, who was to have been here tonight to represent the United States Department of Lahor Bureau, has been prevented from coming, but in her place she has sent one of her field workers, who has had the opportunity of working among the women who are working in the great arsenals of this country.

Some of you perhaps, during the great war, were in Philadelphia when we held a meeting in the Philadelphia Opera House, when seated on the stage were representatives from all the great war organizations, and in the midst were women from the Red Cross, and Y. M. C. A. and so forth, and as that meeting opened, just before they came in, that great auditorium which holds six or seven thousand people or more, part was reserved for the arsenal people and as they came in, in their overalls, that great audience arose, and one great cheer for the women who had taken the places of men, and the women already working in the arsenals of Pennsylvania. And so it gives me great pleasure to introduce Miss Bryan, who is here to tell us about the work these women are doing in the arsenals and their bureaus. Miss Bryan.

WOMEN IN INDUSTRY.

By Miss Helen Bryan, Women's Division, U. S. Department of Labor, Washington.

Ladies and Gentlemen: I understand it is a very poor policy to make an apology in commencing a speech, but in justice to the Women's Division of the U. S. Department of Labor, and in justice to myself, I will say that at twelve o'clock in New York, I did not know I was coming to this Safety Congress, and as a result of the short time which it was possible for Miss Anderson to give me, I have not had time to prepare anything to say tonight.

Coming over on this train today I decided to prepare a few words, but met an old friend of mine that I had not seen for years and she insisted on having an old-time conflab.

A few things which Miss Anderson would have said, although I am not able to say it her way, are as follows:

The important thing which we are learning today about women in industry is that they and the conditions under which they work cannot be considered as being a subject separated from other conditions throughout industry.

Women are employed in every industry and in almost every occupation, and regulations for their safety and welfare inevitably affect conditions throughout the entire industrial world. The extent to which women have secured a sure position in industries and occupations which were comparatively new to them before the war is not yet known. There are many indications, however, that the signing of the armistice did not mean a curtailment of women's activities, the scope of which had been so broadened during the war. We know of one industry, the manufacture of iron, in which before the war 57 plants employed a total of 33 women. When the first draft took away large numbers of the young men employed in those 57 plants, they took on a total of slightly over 400 women. After the second draft 900 women were employed. One year after the signing of the armistice these 57 plants were still employing over 400 women, as many as they took on for the war emergency after the first draft. And these women were not only working on repetition work, but also in the skilled occupations. They are in that industry to stay. That industry needs them and it must regulate its conditions so that they may be employed successfully.

In the majority of cases, if working conditions are entirely satisfactory for men, there will be little need for additional regulations for women. There are certain conditions, however, which have a more immediate, injurious, and permanent effect upon women than upon men. These conditions must be studied and regulated so that the health and vitality of the women are assured, without causing any unnecessary restriction of opportunity in their employment.

One of the industrial conditions most generally recognized as being harmful to women is continuous standing at work, or continuous maintenance of a faulty position. Many states have laws prescribing seats for all women employed in industry, but every factory inspector will tell of the inadequacy and faulty construction of most of the seats which are provided. Other conditions which must be guarded against in the employment of women, are repeated lifting of heavy weights, operation of mechanical devices requiring undue strength, and working in occupations involving the use of poisons such as those which have been demonstrated to be more injurious to women than to men.

If the health of women is to be considered there must be much more careful consideration of this subject than has been the case up to the present. Pennsylvania and New Jersey are the only states which prohibit the employment of women in handling any dry substance or dry compound containing lead in excess of two per cent., and although it has been clearly demonstrated that women are more susceptible to lead poisoning than are men, and that lead poison has been found to be a race poison which renders women either sterile, or produces effects which are transmitted to her children, we find that only two states in the Union have laws prohibiting the employment of women in the handling of lead.

One of the greatest causes of accident and the undermining of the health of the workers through over fatigue is long hours. We find that eight states and two territories have an eight hour law for women. One state has an eight and a half hour law for women. Fourteen states have the nine hour day. Seventeen states have the ten hour day. One state has a ten and a quarter hour day. Two states have a ten and a half hour day. Six states have no limitation of hours at all. If it had not been for organization among the workers, which has done more to bring about the shorter work day, both by law and organization, we would be even further behind the European countries in working conditions and the shorter day than we are. Since the armistice was signed the eight-hour day is practically universal throughout Central Europe. In order that we may have efficient workers and safety in industry we cannot ignore the benefits of the shorter work day.

Mrs. Martin has asked me to tell something of what the Woman's Bureau is doing. We might say what the Woman's Bureau is trying to do. The Woman's Bureau has been making out the final State investigation into women under working conditions. They have been making investigations into special subjects, such as protecting by safeguards, etc., and trying to conduct their work through education and through bulletins. There are a great many things the Woman's Bureau thinks it might do, but we are somewhat handicapped by the small apportionment. I thank you.

MRS. MARTIN: You will agree that we could listen much longer to Miss Bryan, telling us of the work that the Bureau is doing here in this country for its women. I wish she could have given us more information about the investigations she has made, and about the girls being so very, very happy in their work. Perhaps another time you can give us a little bit more for we have not heard nearly all you have to say.

And while finding out what is being done here by the women in this State of Pennsylvania, we are very glad to have Mrs. Kate Waller Barrett, of Alexandria, Virginia, who will speak on "The Future of Women in Industry," and we will not only hear what women are doing, but of the work she has been doing, not only in this country but on the other side. Mrs. Barrett has had the most wonderful experiences, as the President of the Council of Women, which is made up of the various councils of women, and then has worked on the International Board, and so it gives me great pleasure to introduce Mrs. Barrett.

THE FUTURE OF WOMEN IN INDUSTRY.

By Mrs. Kate Waller Barrett, Alexandria, Virginia.

Madam Chairman, Friends: I am sure it gives me a great deal of pleasure to be here with you tonight. I thought as I came from Philadelphia and sat in the train, that this was like coming to a land of promise, this Capitol of the Keystone State, to attend a conference like this. A red-letter day in my life, and a mile stone of marked progress for the whole consideration of the human element as pertaining to protection. I do not think we can thank Commissioner Connelley enough for having the opportunity of expressing our many points of view of the period of reconstruction.

I am not here to say anything technical—you will have all the technical advice you want if you stay through this conference—but I want to simply point out a few of the very, very complex and very grave problems facing us.

The Future of Women in Industry. No prophet can prophesy what she will be in industry. The more I think about it, the less I know about it. And so it is, we approach a subject that is practically unknown to us, as we consider women in industry, because women have always been in industry, and I am talking about the women in Europe the same as in the United States. I did not see any particular difference in the women workers in France and Great Britain than in the United States; all the same splendid spirit, and they all render the same splendid patriotic service. In every department of life—I do not find any particular difference in Europe. I thought that they were very happy, and happy in their prosperity. There is just one thing; the people have more money than ever before in all their lives. Hundreds have less money, and some people have more, and it was a delight to look into the face of those peasants and feel that they had sufficient money when this call came from France to subscribe to bonds, that these people were able to subscribe for. There was nothing more splendidly typical of the French women than the way she took out and poured out into the pockets of France in order that reconstruction might be done.

A letter from an Austrian woman just after the beginning of the war, and before the real fires of patriotism had been stirred, because I am sure if I could speak to her today as the French woman I spoke to recently; she wrote asking if I would get her an opportunity to come to the United States. She did not want to stay in her country now at war, because reconstruction would rest on women, and "I am not going to stay here and strive unless women find some way to stop it." I knew how she felt. She did not come. The French women spoke up, and she would pour out her last drop of blood. Nobody is more devoted and perhaps it is a misplaced faith in Germany or Austria.

All over the country today our women are facing reconstruction—France, Germany, England and the United States, and our women are willing to face them and not be slackers, and to do their part. What particular form will it take? That is what I take it you are considering in this problem of safety. After all the training rests with women, and it is as you women are strong in body, and as they are trained to consider and know things will the women and men of the future be. They are shaping the life of the pre-natal; the life of the future rests with women. I want to explain to you a few things I am *not*. I am not as old as Old Joe Cannon, and therefore do not think that I am reflecting on my age. Second, please do not think I am from the South. I am from the South, and I

know how many men tell about these wonderful Southern women and listen to the mocking birds sing. I have heard lots of them north of the Mason and Dixon Line. And then do not think I am scared of work and do not think I would deny any woman her greatest joy. Adam and Eve knew the joy of work. Gratify self-expression in work—gratify power. The producing of something wonderful and beautiful to the world. I would not deny anybody in the world that chance. I would train them, to reproduce them to do that.

You ladies must not think I am crazy about motherhood, for I am not. I am the mother of six children. I have proven the right to say what I please. I justify my right to say anything on the subject of motherhood I please, and I have twelve grandchildren, so I start the next generation all right, and what I am going to say about motherhood is not for the morbid sentimental motherhood. The average family has mother put on the shelf. And I am not talking about why mothers should be but I find most of the people talking about their wonderful mothers don't mean half of it. I have tried it out repeatedly, and when I hear people talking about "my wonderful mother" and what she knew and could do, I always ask her, "Is your mother alive," and she slowly says, "No, my precious mother has passed away."

But I sometimes fear we have forgotten what real physical motherhood means. Physical motherhood. I am talking about the women who will be the physical mothers of the rising generation and the most important consideration when we consider. I am not a Suffragist, and I will not hesitate to say, the most important viewpoint is from the viewpoint of the mothers of the race. I heard the other night a very good story, of how Mrs. Mark Twain said to her husband, "The very next time you say a cross word I am going to say one too, and so the next day when he came home (Mr. Samuel L. Clemens) and dinner was late, and he began to swear, and his wife joined the chorus and began to help him swear, and he was so much amused he said, "Old lady, you get the words all right, but you lost the tune."

Now, I think that is very much the truth in regard to comparing men and women. I do not believe they are equally prepared for the same burdens. Most extreme penance should be required to do the same thing, and I maintain that as we look forward to the future of the race, the one thing that confronts us most, if women are going in industry, if they are going to use up their most vital force in industry, then who is going to have the children and who is going to rear them? I want to say to you tonight that the great force behind the productive power of man today is the home. As I ride over this country from Alabama to Canada and wherever I see a group of men, I always say to myself "a home, a woman, a child he is working for," and there is a home in his heart—he will have it one day, and if he has not it is still up to him to make living conditions better for women and children. If women could be made entirely strong, it would produce the producing power of men enormously. In addition to that, I believe that a man cannot do a woman's job. If you have ever tried bringing into the world a baby, rearing it and making a home, then you will find out that it is quite enough to fill any woman's time while she is on the job.

Now, that is the first consideration. Everything else pales before it. Owen Meredith truly said, "We can live without poetry, music or books, but civilized man cannot live without cooks." Of course some men are pretty good cooks. I have eaten some mighty good meals men cooked, but one thing you cannot do without, and that is the mothers of the race and nothing can replace the mother whose results show in industry, politics, for commerce, and for God Himself. And then we must have that as our first consideration. After that I do not mean that all women are not going to have children. That does not matter, whether

you are or are not. You belong to a sex whose job it is to have babies whether you have them or not, and as you belong to that sex, you have to put up with certain limitations. And so it is after that surely we want women who do the women's work to have the opportunity for self expression to aid in the progress of the world.

Ordinarily speaking, there are not very many years of the woman's life in child bearing, and after that, there is no reason why women should not willingly and quietly bear her part towards everything necessary. Even then there are certain matters to be brought up; the psychology of women is different, and women do not know what they want themselves. The security of the job. Women do not feel as secure as men do. They are always afraid of losing their jobs. They enormously affect society by the circumstances under which they work. They may outgrow it. Women may be more susceptible than men. It may be because they are now. I know that when men and women are working in an office together, women are more susceptible than the men working right beside her, and it seems to me that in more instances in the employment of women and in the next generation psychology will feel a great responsibility that everything pertaining to a woman and the atmosphere in which she works should be the highest.

I believe our men are understanding. I have talked a great deal to men and have talked to lots of them, and they are all studying the problems of the women and if they employ girls, they do the very best possible by her. And so I believe our business men are largely aroused to the responsibility that they have to take upon themselves the protecting care of women and the over-seeing of women as they have in every vocation of life. And as we look on them, we understand something of the part they have played in the past. I appeal to you men of Pennsylvania that the standards which you make will be the standards of the world. Please give her the most careful consideration that may be helpful and sound in civilization. The calling of this conference has been a red-letter day. It has laid upon you grave responsibility. You must carry home with you inspirations and ideals, and as you carry them away, so you will be responsible that they are put into action not only as far as you are concerned but spread it further to those who cannot attend.

I want to tell you a story of the Civil War. A boy wore the Blue fighting on Tennessee soil, and it was just before the battle and he was only about sixteen and was put on courier duty, mounted, and the father remonstrated: "He is only a lad and does not know the responsibilities of life," but the officer was obdurate. In the night he was awakened by the firing of a musket, and there by a tree he found the boy fast asleep and by his side the musket. He had committed an unpardonable offense. Just the carelessness of youth. He did not see any harm in it and did not know what they were talking about any way. He was court martialed and condemned to die, and the father went to Washington to see the President, to get a reprieve. The last day came and he asked if he could not see the President. And the officer refused, when just then Old Abe climbed the steps and confronted them and said, "Who is this man who wants to see the President," and the officer said, "He is only a private," and Abraham Lincoln said, "The safety of our lives depends upon only privates,—come in my lad." He took him in and he then used that remark as he signed his reprieve, "Sure, he has committed a grave offense, but I guess the country can use him much better alive than dead."

When the boy got back and found his father sitting in his cell, awaiting the time of his execution, and handed him his release, and he was put back in his regular position, and as the boy looked at the paper he said, "I will do this for Abe,"—a man and a patriot ever afterward. What was it that brought power into his life?

Was it the degradation? Degradation never made a power. He was trusted. When the day that Fort Donaldson was attacked, he was so worried he went far in advance of the regiment, I have seen the place, and they called out "Bring the colors back to the regiment." The boy paused a moment, hardly knowing what to do, and then shouting through the noise of shot and shell said, "You bring the regiment up to the colors." And with a wild rush the regiment went up to the colors and the Fort was taken. That was the inspiration of that boy. When they carried him back to prison, dead, to prepare him for burial, pressed in his hand was the flag and in the inside pocket of his coat was the picture of Abraham Lincoln. Friends, may I say this great safety conference has gone far in advance of public sentiment. Many of you have been criticized of course. Everybody in the world that does anything worth while is criticized, and you can never take a great forward step that many are not ready to drag you back and silently whisper "The millennium." Not the twentieth century. I say to you tonight in the name of womanhood and manhood and in the name of civilization, GO FORWARD and bring the people up to your standard. Tell them the time has come when you will not retrace one single step. Our boys have died on European fields that we may make good. For God's sake and for their sake do not fall down to public sentiment but lift public sentiment up to where you are standing tonight. I thank you.

MRS. MARTIN: Mrs. Barrett truly has said that in calling this Congress you have demonstrated not only to the people of Pennsylvania but to the people of the world what you are going to stand for—safety in industry, safety for the men and safety for the women. The women are going to do their part, too, and there is one with us tonight, Mrs. Mary Woolman, of Boston, who started that very work some time ago, which is going to bring to you what the men, especially those of you who are employers, wish for in your factory, and that is that the girl who comes to you will be trained, and not one that you will have to take an amount of time to start on her work. I have great pleasure in presenting to your Mrs. Woolman, head of the Manual Trade School for Girls. Mrs. Woolman.

THE NATIONAL MOVEMENT FOR SAFETY.

By Mrs. Mary Woolman, Boston, Mass.

Ladies and Gentlemen: It is a safety thing of another order than we have been discussing in the last two days that I want to bring to you. Without the co-operation of both men and women in the home, in the street and in industry we cannot accomplish anything. From one particular account we have had all community and industrial action. You know how much has been done already.

When I think of a number of years ago, when I was studying labor conditions among women and heard of the mechanical and safety devices and for the first time perhaps realized the little we had done in America, I surely rejoice in what I have heard today of the wonderful saving of lives and limb and when I went through the Safety Exhibit at the Penn-Harris Hotel today and saw the different things, safety guards, etc., and when I talked with the different men who are at the front of these wonderful devices, then I began to realize what we had done and that we have gone ahead of what seemed to me to be so wonderful years ago. But we realize that while more children are saved each year, the death rate is less of the children than those over forty years of age and it is increasing every day and should and must be prevented.

Tonight, I am not going to talk of the great devices which you have seen and which you have heard, but I am going to talk of some very simple things. We have laws and rules in our State that should be observed and perhaps I may be able to make you realize what each individual should and must do to observe these laws. Unless someones sees that these laws are kept they are useless. Laws then are broken promises. The laws have been enacted to improve working conditions and to enforce safety devices and laws are of no use whatever, unless there is co-operation. Without co-operation, without the co-operation of the individual this great work will not do what it should. Do you realize that rheumatism, Bright's disease, heart disease and other troubles are preventable? That it is only as we each obey these laws that we as individuals are able to carry our lives safely through, in order to do this great work. Do we want to die at forty or there about? I happen to know of a person whom I admire greatly. A great number of her people had died of hardening of the arteries and Bright's disease. She said, "I am not going to die so young, I am going to live to be a hundred. By obeying the laws of Hygience and finding out what can be done, that will keep me here to do the work for which I was sent." She is now an old woman and she has in herself confidence. She went to work at Safety First as soon as she realized she was going as the race before had gone.

When you think, and this is a familiar thing to you, but I am going to use it, of the number of our boys, before the drive were not in fit condition for service overseas and some of them were able to do work here and some of them were not able to fight, what was the trouble? The home and school. Both had been told for years these things had been familiar to them. They must have the right training in school. We must have the right life in our homes. What was the matter with our boys? Was anything very great, yes! It was great because it was the beginning of the end and was failure and failure largely, because they had been trained to understand what to do, it was their teeth that were imperfect. You cannot succeed as a soldier in other ways, if the teeth are not in good condition. We are so familiar with our teeth, that we do not give much attention to them. It was not

only their teeth, but their eyes. The boys were not allowed to fight if their eyes were not in good condition. They were also suffering from fallen arches and flat feet.

Women are not the only ones who do not wear the proper shoes, but most men wear too short shoes. I have been noticing how many men wear pointed shoe. You cannot possibly do your work correctly as a soldier if your feet are not in proper condition. You cannot march any length of time with the wrong shoe. Some of our boys went out with nice pointed shoe on, but came back for their clogs in a short time. These things seem small, and yet they were large enough to make it impossible for us to use these young men. What came later? I say, ladies and gentlemen, I was in the war service. I was strongly around and saw them marching through New York to the squads, to fight and to learn and, yet, that was the life in the camps. The regular hours, the regular meals, the regular drill and the ideal of what they were working for made the most splendid army of boys in the world. These same boys were in excellent health and had been cured. It seems queer that when in camp a short time they come back cured. I know as well as you do that a great many people do not pay any attention to their teeth and do not get the food they ought to.

I will tell you of another case. One girl each year enters the trade school. They do not all enter at the same time. They entered as they could. They were looking to see whether they were fit for the work as has been told you so often. If a girl is not in the right state of health and if she must go through the work day after day not under the right conditions and after a few years of such terrible strain and when she reaches motherhood, what can you expect of the next generation? Their teeth were bad, eyes poor, were nervous, under-nourished and some showed symptoms of curvature of the spine and the beginning of tuberculosis and still going out to work day after day under these conditions. Is it not the work of trades schools to see that they are put in the proper places to work and that they work the right kind of conditions? Is it not the work of trades schools to save them in environment as well as in training. Take a girl that has poor eyes and works with an electrical machine. Take a girl whose nerves are unstrung and has to work with an electrical machine and sees that needle move from two to four hundred strokes daily, imagine this. The idea is to find out what the person can do best and the work she or he is best suited for. Find out her physical condition and everything about her, etc.

Let me tell you of three hundred girls. At the end of the year these same girls—well I wish I could tell you just what the trouble was. At the end of the year conditions were no different than at the beginning of the year. By learning how to care for these girls, seeing that they had the correct exercises, having special apparatus that would help them, especially those having curvature of spine, seeing that they were the proper kind of shoes and so on, by the end of the year you would not have know these three hundred girls. They themselves knew what to do and made up their minds that they would continue to do these things.

Now do not think it is just the working girl. It is just exactly as important that all our girls should be the same. It is very important that every man and woman on the street do the same. It is up to every single individual. If you have unhealthy children there is no excuse for you. If you have children see to it that they are kept in a healthy condition. It is the little things that destroy the greatest and these little things are the ones that should be attended to first, and without co-operation, without the co-operation of the individual workers, we will not accomplish what we are after.

Now I am going to speak to you on some very simple things of everyday life. I have spoken to you of during the war, where the girls worked on the elevators continually in hotels, business houses of various kinds and office buildings. Most

every girl had too short a shoe on. Every girl's shoes were too pointy and most injurious to their health on account of having to stand in the elevators the greater part of the day. When you would say anything to the girl she would say, "I cannot wear a square toe and a low heel, my instep is too high." Now because your instep is too high is no reason why you should put your heel in the middle of your foot. If you will try standing down on wet sand—then see what your foot looks like and then see the shape of your foot.

These extremely high heels and pointed toes are in most cases the cause of fallen arches and flat feet. You cannot comfortably stand all day long with such shoes without straining every single nerve in your body and it is very weakening and the doctor will tell you that the increase of diseases among women has been the greatest since the fashion of the very high heel has come in. We were never intended to stand on two legs anyhow, we were really intended to stand on four and when we rose up and stood on two our muscles had a very hard time adjusting themselves. To stand firmly, with the body in a perfectly good condition, we must have the feet flat and the foot must be able to be as broad in a shoe as when pressing down on the ground without a shoe. Our feet should be this way and not crouched up in the wrong kind of a shoe.

Now I do not say people should wear a low heel all the time. I do not expect the world to change as rapidly as all that. People who are at work should put themselves in the right kind of clothing and the proper kind of shoes so as to allow them to stand correctly and allow them to do their work properly. If the girls are going to work and going to stand before their work in incorrect shoes, it is just as much an injury to the body as if they were working where there was great danger of being killed or injured. This is a wrong thing and should be stopped.

In an Aircraft shop they tried their best to get the girls to wear the correct shoe. Finally the Aircraft shop put in their own shoe factory and had the shoes made. At first a few people would not wear them, but afterwards a great many began wearing them and they found out that the efficiency was from thirty to thirty-five per cent. greater just from the change in shoe. Therefore if you have good help, you had better see to it that they wear the proper shoe during working hours, especially.

Now is there anything wrong or immodest about this? Suppose you men went to work dressed up in a shirt about a yard wide and wearing a high heel shoe and then have to go up and shingle a roof or paint a roof. I am the only man in my family and I have to shingle the roof, I have to get the ice, I have to do a great deal of climbing, there isn't anyone else to do it for me. I have to do all different lines of work. One time I had to paint the roof and would not dare to wear a pair of trousers and a middy blouse, because any gentleman coming into the neighborhood would have been shocked. I had to go up on the roof with a tight skirt on and had no more than gotten up when I slipped, the paint pot fell down between my feet and I rolled off the roof. It took me six months to recover from that fall. Since that time I do not care who comes in the neighborhood. If I have to do a man's job, I am going to wear the correct clothes for that work, therefore, do not object if girls are working in front of different machinery wearing overalls. They should wear the proper garment.

If you went without clothing and it was extremely cold you would find it took so much energy to keep you warm that you would not have enough energy left at the end of a short time as you really needed. Consequently, clothing was put on to conserve energy. To a certain extent I know the body to be in the right condition should be 98 6/10 degrees. If it falls below that you are in great danger or if it rises above you are also in danger. What condition do you think your body is in, when on a cold winter day the girls are clad in a chiffon or georgette waist and silk stockings and go into the cold air. The moment the cold air strikes their

body, say it is about zero, the body must raised the temperature to 98 6/10 degrees or else you are going to be injured by the cold and the body has to consume a great deal of energy to reach this temperature and is very weakening to the system.

Our girls are doing this all the time and some of the doctors that I had been talking with during the war went to some of the colleges, Wellesley, and so forth, and found a great many of the girls suffering from colds. Their rooms were below normal and most of the girls had temperatures below normal. The body has not the proper amount of energey and it is going to tell in the next generation. The next generation will suffer and the child will. It is impossible to supply the body with enough energy to look well in chiffon blouses in the winter time.

Now I have a word to say to them. Men are more heavily clad than the women. Sometimes they are too heavily clad. Some men go into their offices and sit there all day with the heaviest kind of clothing on and never think of opening a window and the temperature of the office being 80 degrees. When going out of doors they have a heavy fur lined overcoat on. They say, "I have to wear it because I am chilly." You cannot possibly wear all these wraps and yet retain the bodily heat. The body will perspire and if the body is saturated with perspiration and the garment closets to your skin takes it, you cannot but feel uncomfortable and the minute you get in a draft a chill seems to come. The body is being chilled and therefore you still feel cold. If a piece of cotton is wet it will cling and dry to the body, thus stopping and clogging the pores. In the summer time men play golf, tennis, and so forth and wear their B. V. D's right next to their skin. These become saturated with perspiration and therefore the body is chilled.

Let me say something else that I feel women ought to know something more about textiles than they do. It is a part of the safety movement. The poorest raised crops are raised by the poorer grade of people. During the war the most exclusive cotton was cheaper. Cotton dried with a little nitric acid will make it very explosive and was used extensively during the war. Cotton burns rapidly as it is soft and has oil in it. There is a great deal to be learned on this side of our everyday life in connection with clothing as well as tools. I want you really to think of these. I want you as working men, employing women to see that their clothing is in a better condition if possible.

What are mothers doing in their homes? Girls are having pretty much their own way these days. They worry about what they want and do as they please and want. We must not allow this to go on. It is the little foxes which are still destroying the vines. The disobedience of the individual to the simple laws of health, the carelessness which is only too frequent, the failure of the home to practice ways of safety call aloud for improvement. I am delighted that I have had the opportunity of talking to you. I thank you.

COMMISSIONER CONNELLEY: The pictures that we are going to show tonight came from the Bureau of Mines, Washington. I announced if we got through in time we would show them. It shows the new methods of mining coal. It is an interesting subject and those of you who care to remain will enjoy them, I am sure.

If there are no other questions to be asked, we will put out the lights and start these pictures after the speakers from the platform become seated. I assure the speakers that we enjoyed their talks very much, indeed, and thank you.

WEDNESDAY, MARCH 24.

MORNING SESSION.

CHAIRMAN: JOHN A. OARTEL, SAFETY ENGINEER, CARNEGIE STEEL COMPANY, PITTSBURGH, PA.

COMMISSIONER CONNELLEY: In arranging this program, I called together three or four men, and the success of it is due to them. One of these gentlemen will be chairman of this meeting—Mr. John A. Oartel Safety Engineer, Carnegie Steel Company, Pittsburgh, Pennsylvania. We have Mr. George T. Fonda with us today, and yesterday we had Mr. James B. Douglas, from the U. G. I. Company, Philadelphia, and we will have Dr. Francis D. Patterson tomorrow as chairman of the session. This afternoon Mr. Fred J. Hartman will be with us. The success in this day's work is due to those gentlemen.

Mr. John A. Oartel's address has to do with the safety movement especially and there is no person we could have procured who knows more about that line of work. He is associated with the safety movement and is Safety Engineer of the Carnegie Steel Company in Pittsburgh. I know his work very well, and I know this meeting will be one of the best we have had. It gives me great pleasure, indeed, to present to you, Mr. John A. Oartel of Pittsburgh.

MR. OARTEL: Mr. Commissioner, Ladies and Gentlemen: I am sure it gives me a great deal of pleasure to be associated in this work. Every time I get to a convention I realize more and more the greatness of the safety work. So it is a great pleasure to meet in this capital city; to render my little assistance in the furtherance of this work. Now, I won't take up any time with further remarks, but will go right along with the speakers.

As Commissioner Connelley has said, the men who will speak to you today for the most part are practical men. While they may give you some theory, I think they will give you a great deal of the things they have worked out in practice. The theory is all right, and we need it, but we also want men like this to come and tell us the things they have done and show that it is possible to do these things.

On Monday, Mr. Whiting Williams told you about a certain type of foreman which would be a detriment instead of a help to industry. I recognized that type of man during Mr. Williams' talk. I had worked for that man and then worked with him, and the description Mr. Williams gave you of him was absolutely true.

On the other hand, I take pleasure in stating to you that there is a body of true, loyal foremen in our industries today on whom we, as safety men, are depending to put this proposition across. The foreman is a keynote man. He can do a great deal to help or hinder this work, and I am very glad to announce to you that while this man whom Mr. Williams has described exists in industry today, yet we have this other type who are coming along with us and supporting us in this great safety movement.

Our topic today is, "The Foreman and his Relation to Industrial Relations." This is a comparatively new form. We do not know exactly what it means, yet. We do know that it means the relation of man to man, and so I am very glad to introduce to you Mr. Berthold M. Nussbaum, vice-president of the Business Training Corporation, of New York, who will speak to you on, "The Foreman in Relation to Industrial Relations."

THE FOREMAN IN RELATION TO INDUSTRIAL RELATIONS.

BY BERTHOLD M. NUSSBAUM, VICE-PRESIDENT, BUSINESS TRAINING CORPORATION, NEW YORK CITY.

Ladies and Gentlemen: I was very much gratified in being invited to come to you today, and when Commissioner Connelley told me that I was expected to tell you something of my experience with foremen and development, I felt very glad indeed, especially so because I know how near to Commissioner Connelley's heart the whole Department of Labor and Industry is. And I want to say from the very start, that we in New York have a great deal of confidence in the progress that the Department of Labor and Industry is going to make in the State of Pennsylvania because of the leadership it has, not only because of the wise head and broad vision of Commissioner Connelley's, but because of the very thorough work that his assistants are doing.

Mr. Oartel has emphasized the tremendous part that the foreman is playing in our industrial activities today. He is the keyman and before addressing a body that is concerned with safety work, I feel like pointing out that the safety engineer is really a part of the industrial relations department in a bigger sense than heretofore. Inasmuch as this great movement is to work out a more homogeneous state of relationships in industry, and inasmuch as this movement depends so much upon the co-ordination that exists between all of the heads of the personal department, I believe that you men and women should be particularly concerned with the broad aspects of individual relations and in confining yourselves to the significance of safety devices and problems and as you endeavor in this broad movement to introduce more human relations in industry, you will find that the foreman is the man you have to work for.

The reason I have been asked to come to you is because it has been my privilege to work with about 15,000 foremen during the past year; helping them to get a better grasp of their jobs and a better grasp of all their responsibilities. This work has lead me in contact with a great variety of industries and it has brought to me some very definite conclusions. I dare say you may be interested in some of these conclusions. I am going to touch upon them briefly.

In the first place, this keyman, the foreman, has undergone some changes, as Mr Oartel has already mentioned. You can all remember the day of the "Slap-Bang Boss"—the big two fisted chap who ruled his department like a Czar—and he was very much impressed with his authority; thought it more important to exercise his authority than to take the responsibility. Now, it is true that in the big radical changes that are taking place in the conduct of industry the duties of the foreman have undergone wonderful changes and that accounts for the new type of foreman that is gradually taking the place of the "Old Slap-Bang Boss."

So many more things are required of a foreman today than formerly. Personality and foremanship has become somewhat of a profession and the old style foreman, himself, is at a loss. What are some of the new duties of the foreman of today? What are some of the traits and characteristics that he must have in order to promote these duties satisfactorily?

In the first place, the foreman has been relieved of a great many of the unpleasant duties that were formerly thrust upon him. In a well organized plant

today, as you know, he does not have to worry about a lot of things that were formerly shouldered on him. We have employment departments to take care of the hiring, transferring and discharging. We have safety departments to work out the best safety devices and promote the safety program throughout the plant. We have cost departments to relieve him of a lot of record keeping. We have industrial engineers and planning departments to take away from him the necessity of a lot of paper work there.

That does not mean that the foreman is less important than he was, but it means that because of the superior organization of today we can transfer details and responsibilities from him to specialists in that line and get from the foreman a better quality of work on the thing that he is really intended to do, and that is the closets personal management of his men. You know that some foremen sometimes resent being relieved of these duties because they think it is interfering with their former method, but after they really understand what it is doing for them they do not resent it.

I know when I was working in a plant, the foreman there had a pretty hard row to hoe. They had to be there in the morning considerably ahead of the time to begin work and stay long afterwards, because in addition to getting out production from the men and handling all the difficulties that came up in the day's work, he had to hire and fire men and listen to their complaints, specify the forms regarding materials on hand aud so-forth, and this necessitated their staying over and make up records. Usually they were not adapted to that sort of thing.

In a well-organized plant, the foreman does not have to do this. He is free to go when the day shift finishes. The reason for that is that the specialists in the various departments and businesses have taken over the unnecessary jobs that clutter up his day. Now let us go therefore to the real job that the foreman has to do. It is a big job. He is really the man who interprets the policies of the management to the men in their particular work. He is the one man in the large shop that comes in intimate contact with the men, and to enable the concern to carry out any of its projects of improvements.

If you have a safety campaign in progress you know how you have to depend upon the foreman to not only install the safety devices, but in introducing safety in his department. He understands your campaign and knows what you are up against. A vast number of men in the planning department, the purchasing department—they all have to work under the foreman. Industrial relations mean the men in the management who are trying to build up labor and have good will in the plant. They are even more dependent on the foreman, because what is taking place in industry today is to substitute the modern organization—close contact between the employee and employer. That has got to be done and there is nothing that will take the place of personal contact.

Men are not machines, and you know that you cannot wind them up or adjust them for production and turn on switches and let them go. They are human beings and there has to be somebody on whom they cau look and depend for direction, encouragement, for approval, for human sympathy as well as for their daily wage. In olden times the boss was that man and where we found a broad-gauge, big-hearted, common-sensed executive who knew human nature, knew how to handle men, you had a good harmonious condition in the shop.

Conditions today are vastly different. Where the manager speaks to the superintendent, the superintendent to the foreman, and each has his respective place in the rank and file of the organization. That means that the foreman of today has to have a great many of the qualities that the old foreman did not have. The foreman in the moderu shops, commands 200 to 300 men and executes the same position as the foreman of the past.

He had a factory of 2, 3, or 400 employees. The men look to him to exercising some tack, judgment, common sense and some human sympathy.

Now it is a regrettable thing that the average foreman is not up to that requirement, through no fault of his own. Most foremen have won their promotion, not because of their thorough executive ability or executive training, but because they have shown up better than the other men in their work, because of their knowledge of the product and technique of the job, and because they have proven their reliability having been with the concern for a long time and are in line for advancement.

In other words, so many of our foremen are merely qualified workmen, who come to the task of handling men without very much training experience or mental qualification for the job. As a result, the management often has to suffer because of the educational limitation of the foreman. The foreman today, although he may have had experience in industrial lines, safety work, planning and purchasing, he nevertheless has to be a good human engineer and that is a facility which does not come as a divine gift entirely. It comes through the particular experience in running a shop and it comes through the contact that he can make with others who are working out these management problems.

Now, our work in training foremen is merely an effort to start the ball rolling in an industry where a management is convinced that more enlightment, a brighter outlook, is a prime requisite for good foremanship. We often ignore the executive who says it cannot be done with those men. They are "hard-boiled eggs" on this stuff. They do not want to be educated, they do not want to know more than they do. To my mind that is a very unfortunate position to take. It is an unfortunate and fallacious position to take. We know because we have come in contact, time and time again, with over 15,000 men and we think we know what they want.

It is true that they may not want to be educated in a certain sense. In one sense, ladies and gentlemen, you cannot educate another man. You can educate animals and educate children, but in a true sense, grown up men can only educate themselves. All we can do, as employers, is to give them the tools with which to educate themselves and if you have the belief that the average foreman does not aspire to educate himself, you are wrong. I do not believe you have this belief.

We have every possible evidence that this man finds himself in a good position between the management and finds himself confronted with the necessity of technical problems that foremen were never asked to tackle. This man finds himself responsible for a group of men who are anxious to draw up to the job and eager to obtain all the pointers they can and suggestions he can find.

"Now, that development work has got to be done in the shop. When it comes to the basic things and basic principles, these can be improved. It seems that the super-force is not so much of a manner to increase his technical knowledge, although that is desirable, as it is his knowledge of men, knowledge of executive appearance and his knowledge of getting better results from his squad of workmen.

I was very much interested in an abstract from the report of the Committee on Executive Training, at the seventh annual convention of the National Association of Schools, and in the report the committee has this to say:

Show some personal interest in the working man; ask him how his wife is getting along and sympathize with him in what he is up against. You must certainly know how much poor work in a shop is due to conditions at home. They are the conditions outside the shop that the man at work has on his mind.

Loyalty! Now that is the question. I would like to give you an example of one foreman, but I have to do it in a round-about way. A certain order goes out from the office to the shop. The foreman says, "All right, I will see that it is done,"

and speaks to the worker. As he turns away from the worker—the said worker with a curl on his lip and a sneer on his face goes and talks about it to the other fellows. That man is not with the foreman—he is not 100 per cent. loyal.

Tact. That means governing your men without a show of authority, without giving offense in exercise. I know of one very successful manager who relates an instance. A man had done the wrong thing and had infuriated the manager, and when the man came in the next day, the manager said, "Jim, you will have to pardon me, but I cannot talk to you today because I am cross at you." How many foremen follow that practice of waiting until they cool down before they start calling a man down?

Ladies and gentlemen those are the qualities which are so essential in good foremanship and can be developed. It cannot be done in a hurry. If there is anything in the world that takes time to soak in and show its effect it is education. You have to have patience and you have got to put that program through with great patience and persistence, and training foremen and developing a force is no exception to that rule.

This unrest that we feel today is not only in the laboring classes. You and I think we get restlessness not only through spring fever but through something else. It is in the air and it will always be in the air. It is something we will never get entirely rid of. Its most serious breaking-out point right now is among the workers. There may be any number of propositions as to how we shall meet that unrest and as to how we shall stable our industrial situation. The department of industrial relations in a plant has got the biggest job of any that I know, because it must solve that problem, or question.

There are certain plans that have been put forth—advice on the part of the manager to a people interested financially and economically in the business, through stock ownership plans or through home ownership programs. Fixed interest is not so likely to flare up and not so likely to remain. The second thing seems to be expressed in this new program that has been announced at the conclusion of the most recent Industrial Conference in Washington. The idea is to give the workers more self-respect, give them the feeling that they are getting some of the fundamentals of the management, at least some of the control under which they toil.

I am not an advocate of these plans, but I am in a position to know, and the big question we have got to face is how to get ready for this development. I say, ladies and gentlemen, that this is the only way of getting industry in shape for self-government, and in a better shape for increased production which has got to come. I submit that the safest and soundest method is through the foundation of education throughout the plant. The program of education shall and must be safely mapped out. That includes the workmen, foreman and existing staff that will gradually replace the ignorance, indifference and inefficiency with level-headed and honored-spirit of co-operation and productive efficiency. I know of no better place to begin than with this keyman, who pulls together and works in harmony between the managers and the working force, and on whom you and all of us depend for the success of any program that we can prelude. I thank you.

MR. OARTEL: I am sure there are questions in your mind that you would like to have answered, and which are very vital in your own plant or industry. In two or three minutes we will hear anything in that line, and Mr. Nussbaum will either answer them or discuss them with you. I am very sorry in introducing Mr. Nussbaum that I could not say anything about him or his work, because I knew nothing of him. But I am very sure that were I called on to introduce him again, I would say he is a man with a thorough knowledge of the subject.

I wonder if we cannot have two or three minutes of rapid-fire discussions on these problems? I am sure we would like to hear from some of you gentlemen.

SUN SHIPBUILDING CO.: What is the best method of presentiug this problem to the executives in anticipation of educating the foremen?

MR. NUSSBAUM: I am very glad you asked that question, beeause it is one in which we are all with you. It is a big problem to get the management to see this and get them willing to take the initiative. Although the foremeu want to educate themselves, they do not want to be classed as illiterate. You must submit to them a definite proposition. If you leave it to their initiative, they are too busy. They have no elearly defined ideas of their own, and they need direction and leadership, and it is up to the management. Now, whether your executive committee or president, or whoever it is, does not see that, then you have to educate him. Nobody is better qualified for this thau you iudustrial safety men. The interest in our work of training foremen usually originates with the industrial relation man, who sees this and works on the management aud eventually gets them to see it too.

MR. CARROW: Have you au exhibit that would demonstrate the value of safety? I should think that would be well iu the foreman propositiou.

MR. NUSSBAUM: I must admit there is a great deal of proof. We, who are eugaged in this work, should show some specimens. They do not lend themselves to measurements. Statistics are valuable for accidents. But no plant cau give statements as to definite figures. The United States Rubber Company have 1,850 men in that work, and through their training have advanced so many of their people, and the results were thus and so, but we cannot get very much more definite work than this. You send your childreu to college and school with the idea of measuring in dollars and ceuts what they get, but you know the greater their education the more useless citizeus they will be unless they have the practical training along with it.

MR. CARROW: My friend Mr. Wolf, of Kulp & Company, of Canada, has my quantity of actual figures.

MR. NUSSBAUM: I do uot say that it caunot be done iu a way to give you a very good iudication, and we have takeu certain measurements, but as to a real statistical record of all those, we have not beeu able to do it. I do believe it does lend itself to it for some oue like Mr. Wolf, and I do believe it does leud itself until we do get more defiuite proof. Accident preventiou is good even if we do not have actual statistics. There is no question that it justifies itself. When you have the statistics it is the more convinciug.

MR. OARTEL: We will have to coutiuue our afteruoou meeting, but after the meeting there may be some questious you would like to take up, and I am sure Mr. Nussbaum would be glad to help you with any suggestion.

It is now my pleasure to introduce to you a man I know and have worked with, who has handled the employment proposition which is one of the things that industry has to coutend with today—this uurest that is troubling many of the laboring class. It is oue of the big problems iu industry. I am happy to introduce a man who has handled this work very successfully, Mr. E. C. Ramage, Employment Agent for Caruegie Steel Company, who will speak to you in reference to the subject, "The Foreman iu Relation to Employmeut."

THE FOREMAN IN RELATION TO EMPLOYMENT.

BY E. C. RAMAGE, EMPLOYMENT AGENT, CARNEGIE STEEL COMPANY, BRADDOCK, PENNA.

Mr. Chairman, Members and Visitors: It is the speaker's humble opinion that the captains of industry are arriving at the conclusion, long ago arrived at by employment managers, that foremen are made not born. We know that many a good, first class workman, never missing a day, finally by the passage of time becomes a foreman. He immediately begins to lose money for the company employing him because he has been shoved up to a level upon which he is unfitted to stand. A few of those so boosted rise to the occasion, fifty per cent. fail, and employment managers continue to hire.

A plant that I know of conducted a school of instruction for foremen during the two months preceding our entry into the late war. All of the ins and outs of the employment—safety, time, accident and welfare departments—were shown by means of forms used and thoroughly explained by the heads of the various departments mentioned. The fact that this country was bound to get into the world war soon and that men would be scarce, while production would have to be increased, was played upon heavily. The fact that every man must not only do his bit, but must do his level best, was emphasized. What was the result? The young fellows, aged twenty to thirty, sat up, took notice, and their work improved wonderfully. The men aged thirty to forty sat around and looked bored. The men aged forty and upward; a great many of them went to sleep.

What conclusion would you draw from that state of affairs? That you must catch them young and train them up in the way they should go, for the foreman is the man who makes for production and the results of production is what the paymaster hands us on the first of the month.

To use a military analogy, a superintendent is the captain of a company, a foreman is the first sergeant and the first sergeant is supposed to know everything about every man in that company and everything about every form or blank used in the carrying on of the business of that company; and, speaking from experience, the speaker will add that the first sergeant is not supposed to watch the clock.

The foreman is the man closest to the actual worker, be he labor or mechanic. The foreman is the man who first learns of a worker's frailty or capability and the workman looks to the foreman as representing the company's policies, which in many cases he does not. A good or bad name for the company is made by the foreman. If a foreman could be made to see that the remedy for the greatest curse of modern industry, a huge yearly turnover, lies within his power, do you not suppose that a large amount of the present industrial unrest could and would be eliminated?

Could the foreman be taught to study his men as to their capabilities, would it not eliminate thousands of terminations that now read: "Job does not suit," or, "Does not like the work." The advocates of efficiency and super-efficiency, if I may use such a term, say: "The proper selection by the employment department would do away with that." My answer to that is, that interviewing a man in a nice warm office, talking about the hours of labor and the rate paid on the job is one proposition while working in the cold, on a dusty heavy job that is beyond a man's physical capability, is another proposition. And the second proposition can only be handled by the foreman. It is up to him to give the man a breathing spell or change him to another job so that his mind will get out of the single-track groove that it is running in.

The foreman is the man with his ear nearest the ground. The first rumbling of discontent should reach him and from him a prompt report should go to the department superintendent. The rumble may mean poor lighting, poor tools, an unguarded machine, or a careless man whom the workmen do not care to work with or any other of many causes. It is the speaker's opinion that an apprenticeship course for the training of foremen should be in operation the year 'round in every large industrial plant.

We have safety drives, apprenticeship courses, student courses and a welfare worker to teach the average woman something about the running of her home, but no one teaches the foreman anything about the human beings he is given to produce results with.

Our sales departments study the markets. Our metallurgists study the latest, best, quickest and cheapest way to make steel. Our operating departments are hunting for a machinery movement that they can improve upon. We are not yet teaching our foreman a method whereby they can eliminate the friction and financial loss caused by a huge labor turnover.

MR. OARTEL: Are there questions on Mr. Ramage's talk? I am sure there are many questions which appeal to every one of us, so speak up and ask.

GENTLEMAN FROM YOUNGSTOWN: I would like to ask regarding the desire on the part of the applicant for promotion, when he wants transferring, etc. How do you cope with the situation? Conditions have changed so, and this was not so apparent a few years ago as it is now. What would you suggest for that?

MR. RAMAGE: We have paid some attention to that, indeed. Last summer I had an order for two men who could be made foremen. I picked two college graduates, 26 and 28 years old respectively, and carried them clear through the story from the laborer up. "Here is the road you travel to reach than end," I said, "and if your back-bone has got enough sand in it to stay with us four or five months, by the first of the year you will be a foreman, and they are both foreman today.

Every man who is employed naturally asks, the first thing, "What is the chance of promotion?" My answer is, "none," and he is disappointed, and then I say I am on the safe side. When we employ a person we keep a list, and a separate or preferred list in our office of bright men whom we have our fingers and our eyes on. A man of 50 years or over, who has been there for 30 years, will naturally stay there until his time is through.

MR. SCHUTE: What do you consider a reasonable labor turn-over?

MR. RAMAGE: I have been very fortunate in our plant. Last year I. reach 179; previous to that 185 and 190. Some mills run higher and some lower, but that is done with 40 per cent. of our employees, common labor—not skilled or unskilled. Sixty per cent. of our labor stay with us. Forty per cent. do not stay 90 days, and 20 per cent. of the 40 per cent. do not stay 30 days. When you talk about conditions in Pittsburgh you have to consider the pick and shovel laborers and the fellow who floats—that is who only works at one place just long enough to leave and go somewhere else. He is a floater.

UNKNOWN GENTLEMAN: What would you do with the so-called mechanic who is called a floater?

MR. RAMAGE: I would give him two chances to float.

MR. OARTEL: Later on we may have more time to devote to these discussions, but just now we have get on. I am sorry.

MR. CARROW: Just one question. Mr. Ramage has suggested the introduction in all industries of a large number of people who are specialists. That grows out of knowledge. Where you find one man specializes you would not have had any ten years ago. The man who gets all the knowledge that the gentleman on your right spoke of, is going to increase because he has the where-with-all to demand it.

MR. AUEL: You have to figure, too, on how many do not like you and you do not like them, or they cannot pass your mental or physical test. How many you have to hire before you land one good one.

MR. RAMAGE: We count that this runs about 15 per cent. in employment.

DR. PATCHIN, OF WISCONSIN: Have you noticed any improvement in your turn-over since the war has stepped-in, relative to previous times?

MR. RAMAGE: Practically none. We reached 190 per cent. in 1917 due to the factories hiring mechanics. In 1918 after the draft we got to 185 per cent. Last year we took back every soldier boy, and did not have to discharge anybody to make room for them. Our floating gang of Greeks, Slavonians and Turks has grown so rapidly it exceeds our population, and there is no one else from whom we can draw. Now, if this floating gang comes and stays two or three months and then goes to Johnstown and then to Steelton and then to Cramp's Shipyard. We cannot get the real American-born man to do this kind of work any more. He is educated and that leads us into trouble with our foreman. Albanian or American, who can speak English, and all you get is what he gives the gang. He cannot give them the company ideas because he cannot appreciate it himself.

DR. PATCHIN: Are you employing the same number of men as before the war, or more?

MR. RAMAGE: Just the same. We do not go into numerous rules. Our average daily force is 6,968 men. We say seven thousand.

MR. HARRIS: What connection has your employment department with the other employment department, and what method do you use?

MR. RAMAGE: We do not use any method for safety. It is impossible to get the average foreigner to understand the necessity of safeguarding until after an accident. We report every injury to the foreman. It may save your life. We do whatever we can to promote safety, but where you are hiring 40 to 80 men a day, you cannot explain to a man who cannot speak English what you would like him to do on safety work.

MR. OARTEL: One of the ways we have put safety across is through safety committees. These are composed, sometimes of foreman, sometime of employees, sometimes of both, but these safety committees are the persons who are the real educators of the workmen for safety, both in inspection and safe-guarding and also in educating. Now, the foreman has a definite relation to those safety committees because they are his helpers against men not interested in the safety movement and a help to him in securing someone to speak on the topic of safety.

When a person is well acquainted with the safety movement that person should be the safety superintendent of the company, which would mean that he was doing the most intensive work with the safety companies. Take for instance the Bethlehem Steel Company. They have done the most extensive work with safety committees that was ever done anywhere in this great country, and I take great pleasure in introducing to you, Mr. George T. Fonda, of the Bethlehem Steel Company, Bethlehem, Pennsylvania, who is superintendent of their safety committee, who will speak to you on the subject of, "The Foreman in Relation to the Safety Committee."

THE FOREMAN IN RELATION TO SAFETY COMMITTEE.

BY GEORGE T. FONDA, SAFETY COMMITTEE, BETHLEHEM STEEL COMPANY.

Mr. Chairman, Ladies and Gentlemen: I think that one glance at the program this morning will convince us that we have taken on a pretty big job in discussing this subject. It therefore, behooves me to give you the facts I think fundamental in dealing with this important subject, and I suggest such points as are on your minds at this time.

We have been hitting the foremen pretty hard, and while I realize he is the keystone there is one thing we must consider—the foreman's point of view. He is a very busy man, and has many jobs he never knew much about before. You talk to any one of them—and I have had the privilege of being in personal contact with a great many of the types, and I know a number of them very well—and I say, talk to any one of them and get his confidence and very soon he will tell you he has the hardest job of any man in the corporation; harder than the president or general manager, "because they sit back and give orders and they get away with it, and if the order is not carried out, they fire somebody. I cannot even fire a man. I sure got some hard job," he will say.

That is the general situation, and it has to be dealt with in any of these things which we are discussing from the foreman's point of view. This is the sincere belief of the foreman, and in trying to connect him up with these outside matters you must take all these things into account.

I believe there are three things of major importance that we can discuss with this proposition. I think that three of the fundamental things in relation of the foreman to safety committees are: first, to show him through the properly organized system of education, he has an important function to perform as part of the public safety committee; and second, to establish that the big boss is 100 per cent. for safety and convince him that it is true; and third, convince him that the average foreman has troubles of his own and he must be convinced of his importance in that connection.

Let us take a few moments to discuss these points in order, and I will try to give you one or two illustrations that I think will convince you a little better than just merely a statement from me. If the safety committee is to be a success the foreman must be for it 100 per cent., and to do this he must understand it thoroughly and must be one of its parts. Once you have your safety committee organized it is quite easy to educate him away from the ideas that safety is a one-man job, and the safety engineer has to be the goat.

But a lot of people have maintained that foreman and workmen will not cooperate on safety committees and I can say that while this point is being argued, the thing is being done and our own companies, I know, are satisfied that results can only be accomplished where you have foreman and workmen on a basis of this sort. There are a thousand and one things which are brought up through safety committees and if your foreman is in direct contact with this proposition you will accomplish something and he is the man of value who is entirely responsible for these things and you get results.

By having a foreman on the committee as part of the organization familiar with all the things you are trying to put by, a needless amount of red tap is omitted,

and that is the practical way. One of the important points is to get the foreman in on the commission and educate him up to the idea you are putting over and give him definite responsibility. The second point is to impress upon the foreman the knowledge that the big boss is 100 per cent. behind safety, and it is perhaps as important as any point we can consider. I think an illustration of this point will convince you more than anything else I could say. I happened to drop in recently on a supervisor of a large corporation who was telling me of an experience he had had. He was making an inspection of some plant and checking up on the safety committee report. As he went from one department to the other the general foreman in charge of the work in the particular department would go on and explain anything he wanted explained, and keep himself posted generally with what the supervisor of safety was checking in that particular department. In one of these departments they came onto a line established where a square-head set screw had been used against regulations. He asked the foreman for an explanation and the foreman gave him an explanation; some sort of story about a break down—"and we had to hurry and we forgot to remove it and put in the one handiest"— and so forth.

The supervisor called his attention to the report he had in his hand and said it had been recommended from the head of that department that this be done, and the supervisor made a note without making any further comment. He had not gone very far before the foreman showed he was concerned by the situation, and he asked what he was going to do. The supervisor said it was a check report for the general manager's office. In this organization everybody down the line knew where the general manager stood and the foreman realized he was not in a particularly healthy position and the supervisor being somewhat of a diplomat said, "I tell you, Bill, I am only interested in reporting the things that have not been taken care of. Of course if that is removed, I will have nothing to report."

Needless to say, at noon that articular day the machinery was shut down and a safe set screw substituted, and the complaint was not reported. This particular foreman was satisfied he had a lucky escape, and they have been sure of his support and he has been lately made a member of the committee and posted on their signs.

Now, the third point, the importance of checking up regularly with the foreman in order that he may be reminded of his importance with the work of the safety committee. I say I consider this of great importance and perhaps almost as great as the second point mentioned. I think all of us know the serious cases from "don't think" and some of our best men are killed from "don't think." If that is true, is it not quite reasonable to suppose that in relation to some of these lesser things that the foreman needs to be reminded of his particular function and reminded regularly?

He has a lot to think about, and if he is not checked up some way he will find when it is too late, and while he might have prevented some serious accident, he missed it because he did not think, and the important thing is to get this across so he will think.

I would like to cite a little instance in our own organization, largely along the right line I think, and I think it will point out what I mean. A few weeks ago, we had a meeting of about 1,500 foremen in one of our plants, in a good, get-together meeting to talk about what had been accomplished along safety lines last year, and a prospectus of what we wanted to do this year. The day before the meeting I was thinking of what I would like to say, when the fire whistle blew one blast. We have a system of fire whistles, and you know if a line breaks and the circuit opens there is a blast that indicates the line is out of order. The men have to get out, and put it back into working order. In this particular case—although I had other things on my mind—unconsciously I thought some body should go out and repair it.

I thought to myself, in connection with this, that if we could only connect that with our safety program and let that indicate to our men a suggestion of safety, in some such form of, "Have I been doing anything worth while for the cause? If not, I will do something this very afternoon." If we could get that over, and make them feel that way, perhaps it would answer as one of the checks, and in their business life we could get further along.

The night of the meeting I tried that on them. I told them with their 1,500 men—I was impressed with the power of their number—I knew they would pick on something that would show that all 1,500 men were doing one thing, and that, as we put over these things during the war, they would go up armed of their strength every day. As to the possibilities of the better safety record, although our record had been good, I felt our figures for 1920 would show a better result than any figures in years before.

I suggested that we check up on ourselves and transfer it to the men under us, under our direct supervision. I was interested to know whether that went over, and two days after that meeting I got a letter from one of our important foremen, "Better results all over the works." There were two or three hundred men under his supervision.

I want to tell you what happened. I was over in the power house with the workmen and we were checking up on a report job we would have to do, and when we finished and arrived at the power house, we got outside the power house and found the yard department had deposited a string of cars between the power house and roadway. We had a crane there, a walk-over, and I was doing the regular stunt, when this man whistled. I thought right away of what we were talking about. I stood back and the fellow with me noticed it, and asked "why?" I took the time to tell him what the whistle meant [illegible] a little safety talk and I believe he thinks a little bit more of us [illegible] that particular instance. Although we were on our way to our grub, we walked around the ten cars.

I think you will agree that little things like these will go a long ways towards helping us solve some of the problems in this rather complicated field. The foreman is a pretty good fellow, pretty human, but he is not super-human, and cannot do the impossible. I am satisfied that if we shall treat him with consideration and help him to work out the details of this job as we see it, for him, that he will come out in good shape and work out in good shape with the safety committees the other things which must rest on his shoulders for support. I thank you.

MR. OARTEL: Are there any questions? Now, we still have perhaps five or eight minutes we can spend discussing Mr. Fonda's talk.

MR. NORTHWOOD, Cambria Steel Company: Mr. Oartel. I would like to ask Mr. Fonda if they use any methods in the shape of a badge or button in determining a safety committee in a plant.

MR. FONDA: We have a badge that we call the Departmental Safety Committee Badge. It is a shield and in the center a safety button which we use in connection with our work while the man is serving on the committee. He wears the badge at all times.

MR. NORTHWOOD: Are the badges only given to the safety committeemen?

MR. FONDA: Yes, the badges are given to committeemen only.

MR. NORTHWOOD: Do you force a man to wear that badge?

MR. FONDA: No, not necessarily. Some men like to make watch fobs out of them, and so forth. In the majority of cases the man appreciates the badge, but it depends entirely how much dignity you place upon it as to how seriously they

take it. I will say that it is a hard job in many cases to get the right kind of men to serve on the committees. In our case, we feel we have been very successful, although it is not an easy job and requires great effort and patience. We have been so successful because of the splendid competition that we have been able to put across with these committees, and the main part of the work of the committee is safety work and the development of safety standards, and to put over all the safety ideas in relation to unsafe practices in other departments; detail training of these committees in the handling of first-aid cases. Every year, in September, we have preliminary and final first aid meetings, and there are from 75 to 150 committee men who are made up into committees in competition with each other and every year these committees are renewed.

Some people think they have the same committees repeat year after year. The committees are changed every year, but we allow one man to remain on the committee, but he may not be the captain of the group. He cannot, and for the last six years we have not had very much trouble in keeping the spirit of competition alive among these men. I think we have had very good results due to that one thing.

There are also prizes awarded to the men doing the best safety work and this seems to encourage them greatly. This seems to back him up and helps him to be more successful in his work than the other fellow and enables him to present his proposition to the rank and file. That is the statement of our committee. Somebody else may try the same arrangement, but would not get the same results.

MR. NORTHWOOD: Mr. Fonda, we have been successful in this work by appointing a new committee every two months. As a rule, a brand new safety committee in each department is appointed every two months. At the end of that two months we award the [illegible]).00 for each committeeman, and to the committee that has made the greatest reduction in accidents for the period of the previous 12 months back, or over the period of 12 months. Then, for the departments that have made a reduction over that 12 months' period, even these men receive $10.00 as a prize. We find that this $10.00, although not much, means considerable and the men are anxious to get it, but we do insist that they make their report to the safety department at the end of a period, and tell us what has been done.

MR. CARROW, to Mr. Northwood: How many men do you generally have on a committee?

MR. NORTHWOOD: Three men. We have 21 divisions in our plant, covering the employment of 5,000 to 6,000 men. They meet during the working hours and make a survey of their department, making a report to us of what conditions they find that are unsafe conditions. Then, at our regular state meetings, which we hold every two months, we award the prizes.

MR. KEPPER: How many men on that committee do you have on the safety committee?

MR. NORTHWOOD: We have 16 on some and not less than 6 on any committee.

MR. KEPPER: How many committees do you have?

MR. NORTHWOOD: We have 12 committees.

MR. REYNOLDS, Chief Mine Inspector, Aetna Life Insurance Co.: I would like to know what can be done in regard to the workmen taking any action on the board of the safety committee. We have experienced difficulty in obtaining workmen to take part as committee men. Several modes or procedure have been

adopted. Some companies feel that the workmen should be paid, and others offer social features, but as a whole we have experienced considerable difficulty in obtaining the material for this work. I would like to know what can be accomplished and what is the best method to obtain the men and interest them at this work—at the industrial plants outside the work.

MR. RAMAGE: I agree with you that it is a very hard job to get the right kind of men.

MR. OARTEL: I think there are two men in this audience who can give us some light along this line. One is Mr. Northwood of the Cambria Steel Company, and we would be glad to have him say a word to us.

MR. NORTHWOOD: I do not know that there is very much I can add to what has been said, except that we have been successful in this work by appointing our committee every two months.

MR. OARTEL: I will pray your indulgence by calling on a man from our own company. Mr. Trendman, safety engineer in our own works can tell us some things of interest.

MR. TRENDMAN, Safety Engineer, Carnegie Steel Company: Mr. Chairman, I have had a rather unexpected call, but I am glad it was not any earlier. We do not work for praise, but we have succeeded in getting the co-operation of the men by getting in personal touch with the foremen and workmen. We have on our committees, and have had, workmen with the foremen. In some cases it works out very well, but in some departments, one in particular where they all could not speak English. it did not work out so successfully. They did seem to get the idea, but we set them aside, so far as the committee men are concerned.

The matter of entertainment. We just conceived the idea some time ago of getting our men together. I did not offer any prizes, or give any, but we have nice entertainments. The audience is not large enough. It is just a matter of offering some entertainments. At those meetings we have competent men to speak, and we give them a dinner after the entertainment is over. Last year out of that grew a picnic, where we also gave them a safety talk. We started with the idea of entertaining the men only. We have about 9,000, and at the picnic we had 20,000. We fed them and entertained them, and so forth. We had a very beneficial afternoon in general, not only in safety but in promoting better feeling. I think these little meetings have a very far-reaching influence on organizations, but we give no reward. Each department has a separate meeting. They all attend, and foremen and workmen form the committee.

MR. KEPPEL: How many men do you have on your committees?

MR. TRENDMAN: We do not have more than 15 and not less than 6 on any. We have 12 committees.

MR. OARTEL: I learned to know Mr. Auel, who is the next speaker, through safety work in Pittsburgh—in our local safety council. Mr. Auel, in addition to working for the Westinghouse Company, does a lot of other things. He is president of the Western Pennsylvania Division, which is the first to have a paid secretary, and the first to do intensive work. He had quite a problem in safety, which he has solved successfully, and I hope he will tell us about that in his talk, which will be on, "The Foreman in Relation to Safeguarding in Industry." I am pleased to present to you Mr. C. B. Auel, of the Westinghouse Electric and Manufacturing Company, of Pittsburgh.

THE FOREMAN IN RELATION TO SAFEGUARDING IN INDUSTRY.

BY C. B. AUEL, WESTINGHOUSE ELECTRIC AND MANUFACTURING COMPANY.

Mr. Chairman, Ladies and Gentlemen: It seems to me this morning's program only needs one more item to make it quite complete; namely, "The Foreman—His Finish," although the discussion may even yet provide for that.

Some wit has said, "Providence gives us our relations, but, thank God, we can choose our friends." Evidently, however, there are exceptions to this rule. A farmer was once taking his milk to market during a heavy rain when a passer-by hailed him and asked, "Why don't you leave the covers off your cans?" The farmer replied, "Do you think I would trust to Providence in a case like this?"

Those who assisted in making up the program must have felt somewhat like the farmer—that Providence, when it came to selecting relations for the foreman, had fallen down on the job leaving it quite incomplete. And so well have they rounded out the matter that reciting now a list of all his relations would be very similar to the reading of several pages from the family bible of an old-time Mormon.

If this were an orthodox lecture on foremen, I would surely call your attention to a lot of things you already know, about the necessity of care in selecting them, choosing men who are tactful, loyal, sincere, four-square, whatever that may mean, and who have 57 other varieties of virtues, many of which you do not possess yourself and only read about in books on "Plant Management" written by Bolshevik college professors.

If there is one man in a factory who has more of my sympathy than any other, it is the foreman. He is usually chosen because he has mechanical ability, is a good worker and has been steady in his attendance. Whether he has any other qualifications, is only discovered after actual trial. There are practically no factories that maintain schools for the training of foremen. So that while applicants for employment in the ranks are now being selected with more system and intelligence than formerly, it is a fact that foremen are still largely chosen on the hit or miss principle, usually the latter.

A workman is generally cajoled into being a foreman, for as a rule he will make less money. But certain compensating advantages, in lieu thereof, are pointed out to him with the result that he finally accepts and is appointed as of a certain day. He is left more or less alone for a couple of weeks, it being assumed that he will absorb from the atmosphere what he needs in the way of information as to his new job. And, after this preliminary intensive training period has been completed, hell begins.

He is expected to keep up or increase production, to keep down or decrease costs, to make certain that all orders are brought through in their proper sequence and that all time is properly charged to them; to see that no accidents occur, and that new men are instructed and made to feel at home. It is, of course, understood that he should not ask for additional tools, improved equipment, better lighting facilities, janitor service, or in fact anything which will increase expense. And, in his idle evenings, he is asked to attend meetings like these.

This is the poor individual whom we are today proposing to endow with more relations instead of divorcing him from some of his present ones.

The foreman has been called the key to the safety movement—I have called him that myself along with some other names. But if the relationships listed in our program today are going to be proved against him in addition to those he already had to bear up under before being dragged into these proceedings, he should be called not the key but the boiler, and as such he is surely going either to burst due to high pressure on the inside or to collapse owing to excess pressure from the outside—in any event he can hardly survive.

Twelve or 15 years ago back, in what may very properly be called the dark ages of the safety movement, it was thought the problem of safety was more or less a routine one, having to do almost entirely with the mechanical guarding of tools and equipment and one which, with the completion of such guarding, would be solved. In the absence of any real knowledge on the subject, such reasoning was sound and the problem was accordingly attacked on this basis. However, as one works after another in the various industries went at its task of safeguarding, and as those in charge of this work the country over, had opportunity to meet, more or less casually, it was found on exchanging views, that the experience of one was largely the experience of all; namely, notwithstanding the mechanical guarding of tools and equipment had been completed, either wholly or to a considerable extent, accidents still continued.

It is now generally admitted that the mechanical guarding of tools and equipment originally thought to be practically the entire problem of safety, is but a mere incident of it. In our own works which may be considered as typical of modern plants, accidents occurring from the want of mechanical safeguards have for several years past dropped practically to zero, and if I had to choose between a works fully guarded, but with employees of a rather low order of intelligence, and a works without any guards but with employees of a rather high order of intelligence, I would unhesitatingly choose the latter.

I do not, however, wish it to be understood by this statement that the guarding of tools and equipment should be omitted. On the contrary, such work should be pushed to the limit as it will certainly eliminate one source of accidents, and by just that much help to make the problem, now admitted to be a most complex one, easier of solution.

Unfortunately there seems little likelihood of any single solution being found for the prevention of accidents in industry, such as I understand has just been presented to the State for the elimination of automobile accidents, a scheme so exceedingly simple that it is astonishing it has not been found before. A white light just over the in-take of the radiator, automatically goes on when the limiting speed for towns, of 15 miles an hour is exceeded, which light changes to green when 24 miles an hour is passed, this being the limit allowed on the highways. At 40 miles an hour a red light appears, while at 50 miles, a music box under the seat commences to play, "Nearer My God to Thee."

If the problem is a complex one with no single solution, and if it be admitted by those of us here aside from the program committee, that the foreman is at all times a heavily burdened individual, it seems to me that safety work should not be put too largely up to him; rather should he be made to feel that he is a co-partner with others, particularly with the safety, the employment, and the mechanical departments.

When we first commenced the study of accident statistics in our main plant, we found, as I have told you at a previous conference, that 76 per cent. of our accidents happened to employees who had been less than one year in our service. Those accidents were 39 per cent. more severe in the matter of lost time than were those occurring to other employees older in point of service. While this condition has long since improved with us, it is nevertheless still a fact in our own plant, as in

practically every other plant, that the greatest percentage of accidents happen to the newer employees. In other words, minimum labor turn-over is the greatest safety device that can be put in any plant.

Should not a fact like this be told to every foreman, so that it will not be necessary for each one of them to find it out for himself by bitter experience? Should not the employment department do its bit by endeavoring to select not alone workers but the right kind of workers to fill jobs? Further, having made more or less of an investment in a new employee, it is a mistake, in view of what has been told you as to the relation between accidents and labor turn-over, to let him get away, even if not satisfactory to the first foreman, until assured that he will not fit into your organization somewhere else—the mere fact that there is a likelihood of an investigation being made as to the reason for a workman being released will tend to make the foreman work longer with a new man before letting him go, and this will of itself have a tendency to reduce labor turn-over.

Accidents occur twice as frequently among non-English speaking foreigners under an English-speaking boss as among foreigners who understand the English language. Statistics likewise show that accidents are as frequent among young persons as among new employees.

Are you going to put it up to the foreman to find these things out for himself, to do his own safeguarding in respect to such items as these; or, are you going to tell him about them and further help him by seeing he is safeguarded against any selection of men, right in other ways but wrong in the items mentioned?

The rules of the Industrial Board require that crane operators undergo a physical examination once each year. How many concerns are carrying out this provision? You surely should not ask a departmental foreman to remember an item of this kind, even though it be a most important one.

If a foreman asks for additional or better lighting facilities, see if such are not really needed before turning him down. In fact don't wait for him to ask, but anticipate him in this matter. Good light ranks perhaps next to minimum labor turn-over in being the greatest safety device that can be installed in a plant. If anyone doubts this, may I refer such persons to a chart of 95,000 accidents compiled by the Travelers' Insurance Company, showing how accidents increase in the dark months of winter and how they fall off in the light months of summer.

Similarly, a comparison of accidents in the iron and steel industries from 1905 to 1910 showed that at night the accidents in the mechanical department were 118.3 per cent. greater than in the day time, while in the yards they were 127.6 per cent. greater. The U. S. Government report on the subject says, "the night force of yardsmen is smaller than the day force, but their duties do not differ sufficiently to afford an adequate reason for their higher rate. The influence, which it would appear could exert any considerable effect upon their rate, is the difference in lighting." No better argument is needed, either, for day light saving than this.

Now what is it good lighting does in the prevention of accidents? Nothing of itself, but it does show up the dark places, the holes, the obstructions, the filth, and the dirt, and in so doing work towards their removal. Here are some items which are strictly up to the foreman, but, even so, he needs first, good lighting.

Aside from these indirect benefits, good lighting will also lessen defective work, improve quality and increase output. I heard of one concern where the output jumped 10 per cent. with an installation of good lighting, and this result was so unexpected that as a check the old lighting which had not been removed was put back into service temporarily when the output fell off by the same amount, only to increase again with the restoration of the new installation.

But aside from this, have any of you an idea as to how cheap good lighting really is? If you will grant me that in a badly lighted shop a workman should, if given good lighting instead, be able to increase his day's output by only one-half minute's worth of work, then I can prove to you that good lighting will pay for itself. And yet how many plant managers, after spending thousands of dollars on a new tool, begrudge the trifling additional amount on which its output and the safety of its operator depend?

Again in the purchase of tools, preference should be given, other things being equal, to those that are best guarded; and having been purchased, their use should still not be permitted until every element of danger connected with their operation, directly or indirectly, has been as far as possible eliminated. Likewise, when tools are being rearranged or taken apart for overhauling, every guard should be in place before putting such tools back into service. Don't be afraid of lifting too much of this work off the foreman as there will still be enough left for him to do in connection with safeguarding.

In the compilation of accident statistics in our own works, we arbitrarily divided the causes into 15 classes, one of which and the worst was "carelessness," averaging, as it did, from 22 to 26 per cent. for several years. Naturally our attention has been given largely to the high spots. The more we studied carelessness, however, the more suspicious we became that "carelessness" was not so much a cause of accident as it was an effect of something else, and we now feel that in many instances "carelessness," so-called, is due to worry or ill health.

Having reached that conclusion, though it is not final, we determined to see whether or not we could be of any help to our employees along these lines. Accordingly we asked our foreman to send our medical department, as a first step, the names of any absentees they desired us to look up. We already had in force a scheme of visiting our injured but we made it much more systematic and frequent, including also all other absentees. Not only have we found that we could be of real help in many, many instances to our employees; but, several totally unexpected results have also been evolved, among which is a reduction of 33 per cent. in time lost per accident.

We do not pretend for a moment that the help given our employees has been wholly responsible for this tremendous gain because a number of other things have undoubtedly contributed, such as our improved safety methods and the elimination of malingering. Such work as this, which in brief is getting the employee back on the job earlier than otherwise, has a direct bearing on accident reduction, as it means less new help to keep vacancies filled and as has been shown you, it is largely among the new employees that the greater percentage of accidents occur.

Further help should also be accorded the foreman by having a safety patrol (made up preferably of a workman from each of the departments), patrol the portion of the shop with which he is best acquainted, on the look-out for dangerous practices among the workers, removal of guards, etc.

Even with the help suggested being accorded the foreman, he will still be a very busy individual. If he can, with all of his other duties, break in his men properly, see that machines and tools with their safety devices are at all times in good condition, that his department is kept clean and free from obstructions, he will be doing almost his full quota towards the safety movement and will have a right to feel that others shall do theirs.

Have any of you hear of the Irishman who didn't believe either in Heaven or in Hell, and who didn't hesitate to announce it to his friends on every possible occasion? Well, he finally died and the services were duly arranged and carried through in the customary manner, the friends attending being accorded an opportunity just before the services to take a last look at the remains. A particular

old friend was thus gazing at him, and suddenly commenced to laugh much to the horror of the undertaker, who quickly stepped up and remonstrated, at the same time inquiring as to the cause of his unseemly laughter. The friend replied, "I was only laughing at Mike being all dressed up and no place to go." And so it is with the poor foreman. I do not wish to convey the idea that he is a dead one or necessarily like Mike in any other particular, but, he is certainly so loaded with burdens that at times he can hardly know where to turn. And so, if you agree with what has just been said, will you not help him to bear a white man's burden?

MR. OARTEL: Any questions on Mr. Auel's paper? Now is the time to ask them, and we want to hear from you.

MR. FONDA: I have known of cases, not particularly of safety, where foremen in rather responsible positions have been reduced on account of their general attitude to workers. When you get up against a stone wall it is to the interest of your whole organization to make him treat the workers with courtesy and consideration. I had just such an experience and got next to a couple of good fellows who worked under that foreman, and in fact had lunch with them. They immediately afterwards requested safeguards. I also got next to the superintendent through him, and the result was the foreman saw he was "between the devil and the deep blue sea."

MR. OARTEL: I think the way to get the foremen lined up is to get him to attend all the meetings. We have brought hundreds of our foremen, not only from my company, but from other companies, to hear real big men, and it grips them, and they go back with new ideas and new inspirations. Are there any other questions? If not, I wish to thank you for your presence, and your attention, and we may consider the meeting adjourned.

WEDNESDAY, MARCH 24.

AFTERNOON SESSION.

CHAIRMAN: J. H. WALKER, CHIEF, BUREAU OF INSPECTION, PENNSYLVANIA DEPARTMENT OF LABOR AND INDUSTRY.

COMMISSIONER CONNELLEY: Ladies and Gentlemen: You will notice that the program is made up of our own talent this afternoon. I want to say that the heads of the different Bureaus are doing real work and, they have been assisted considerably by the people of Pennsylvania. We will have the inspectors and various members of the Department meet after this session, just in the front of the rail here, and I would like to talk shop a few minutes with them before adjourning tonight.

The exhibitors have asked us to come down to the Penn-Harris Hotel in a body, so that they may explain to us the workings of their safety devices. We would appreciate very much having you go down after this short meeting this afternoon.

Mr. J. H. Walker, who has been for a number of years Chief of the Bureau of Inspection, is to be your chairman. Mr. Walker needs no introduction, as it seems everybody in Pennsylvania knows him. It gives me much pleasure to turn this meeting over to your chairman, Mr. J. H. Walker, Chief, Bureau of Inspection, Pennsylvania Department of Labor and Industry, Harrisburg, Pennsylvania.

MR. WALKER: I wish to make an announcement before the formal opening of the session. We have with us Miss Louise Powell Evans, Secretary of the Women Workers' League, of New York, who wishes to present a matter to you. Miss Evans.

MISS LOUISE POWELL EVANS: I appreciate the few minutes given me in your very full program, particularly since my talk is from a rather different angle. The angle is from the standpoint of recreation—to see that every girl and woman in industry has her health taken care of. If we have the proper kind of recreation, she has health, and that permits organization and efficiency.

We have been organized 35 years, and the colleges have at last recognized us in such a way that they have asked us to hold our conventions there, and confer with them regarding the teaching of self-government and self-supporting. Every two years we hold conventions. Two years ago at Wellesley, and this year at Bryn Mawr, and this is the first year we are going to set aside a day for employers. You can take it back to them and show them if they are interested, and we would like them to come and be with us on June 10th to 14th. The day is the twelfth, Bryn Mawr College, Saturday, and will be open to employment managers.

The speakers will be interesting talkers, and I am sure the talks regarding successful employment and employees, by one who is known, who will correlate the two, will be particularly interesting. If you will send your request into the National League, 6 East Forty-Fifth Street, we will be glad to send to you an invitation which will admit you to the meeting. There will be some class meeting, and if you will send for that information, I have some pamphlets which I will be glad to give you. You may address in care of National League of Women Workers. I thank you.

MR. WALKER: Ladies and Gentlemen, members of the Department of Labor and Industry: I have been directed to call the speakers' attention to the fact that the limitation of their remarks is 15 minutes. We will try to make this meeting go along according to the program as outlined, and snappy to the point, and in the regular way. If we should run over a couple of minutes, I know it will be excusable.

I know it is not necessary to introduce Mr. Harry A. Mackey, because the thought of "Workmen's Compensation" is so connected up with the name of Mackey that it is not necessary to dwell further upon this man and the work he has performed, except to say we will take pleasure in having Mr. Mackey present to us his paper, "The Department in Relation to the New Workmen's Compensation Law."

THE DEPARTMENT IN RELATION TO THE NEW WORKMEN'S COMPENSATION LAW.

BY HARRY A. MACKEY, CHAIRMAN, WORKMEN'S COMPENSATION BOARD.

Chairman, Ladies and Gentlemen: I do not really know what I am. Whether I am a broken-down ball player, the Compensation Commission, or just exactly what I am, but you will all do me a great favor by discrediting the remarks of the chairman. I doubt some of the remarks myself. I see so many men so much better equipped in this compensation law—safety engineers, it looks to me like a conference of compensation experts.

At the Shriners' Convention, in Chicago, some years ago, the band started up in full force, "My Old Kentucky Home." In the front row of the house that night was an old man, and as he sat there, his tears flowing copiously, the fellow next to him said, "My good friend, are you from Kentucky?" He shook his head, and replied, "No, but I am a musician." So if I see no cheerful faces in the audience, I shall know they are realizing how much better they could do than I, and since it is up to me, I am afraid you will have to make the best of it.

Pennsylvania's verdict is that her workmen's compensation law is a success.

When inducted into this work a little over four years ago, we were looking forward. We are still gazing in the same direction. Business men, workmen, administrative agencies—all desire to record themselves as forward-looking men. All feel that no one has time to look backward. No one has such an inclination. It is profitable, now and then, to stop for a moment in our busy careers to review our experiences, to fortify ourselves against our mistakes and to re-assure ourselves for future effort.

For so conservative a State, Pennsylvania entered into a great experiment; but when once committed to the idea of compensation she went further in experimental administration, and engaged in a more ambitious program than any of her sister States. And so, the referee system was adopted, making a referee's court the forum for the initiative in disputed cases, giving to the litigants the right to appeal to the Board, and vesting in that body the tremendous power and corresponding responsibility of final adjudication as to facts, and yet extending to the parties a day in court over the law involved.

On December 15, 1915, I closed an address before the Pennsylvania Railway Association, at Scranton, with the following promise:

> "Therefore, with assurance of fair play to the employer and with an absolute guarantee of deserved consideration to the employee, we approach the time when this law must be administered by us with a full belief that it will soon be heralded as the crowning glory of humanitarian legislation. We will know no class nor individual. We will eschew technicalities and cut red tape and our whole effort will be to ascertain the truth and to do absolute justice to all."

If this has been accomplished, and we have some assurance that it has, not only from interested parties, but from the press of the State, it is due to several circumstances:

The preservation by the board of exclusive judicial functions. The board framed its rules of procedure devoid of technicalities. It has never overstepped its judicial

limitations, nor ventured into the field of administration. The law was very happily drawn in this respect so as to thoroughly preserve to the board this sole function. I cannot conceive of any more unfortunate legislation than that which places inspection within the power of a compensation commission, and involves in it the duty of enforcing regulations. Nor can I imagine any legislation more palpably unbalanced nor more unscientific than that which would place the administration of a State workmen's insurance fund in the hands of a compensation board, except where there is a monopolistic State fund.

Our board was inducted into office at a time when the stock companies and the State Fund of New York were engaged in a most unseemly controversy, and it was our well-defined purpose at that time to avoid a repetition of those unfortunate events in our State. Consequently, we early and often proclaimed our absolute indifference as to the kind of insurance adopted by our employers, announcing that we were only interested in whether or not the employers and employees were properly protected, and that the insurance carrier rendered prompt and efficient service. "A fair field with no favors," was our pronouncement. We believe the results have thoroughly justified this attitude.

If any one should ask me to accord the lion's share of credit for the success of the administration of the compensation law in Pennsylvania, I would be compelled to say that the law itself is largely responsible, and that observation would lead to the praise of those who drafted the legislation and the legislature that passed it. The law was so drawn in the first place that it appealed most thoroughly to the instincts of fair play. That in four years it led over 250,000 injured men to sit down at the same table with their employers to execute compensation agreements, without loss of time, without quibble and without delay, is in itself a tremendous testimonial.

Then, those who have handled this tremendous volume of business must be accorded their meed of praise, they might be called "the men behind the guns,"—those who in their faithful performance of their unheralded duties have kept the machinery of our organization in working order—the men and women of the office force.

Had it not been for the intelligent and conscientious performance of duty by the referees, this whole humanitarian conception would have been wrecked long ago. In the fall of 1915, we called these men to Harrisburg, and it was my pleasure to say to them:

> "You are picked men. His Excellency, the Governor, and the Commissioner of Labor and Industry, after the most careful inquiry as to your fitness, character and ability, have selected you from a great number of available men. A tremendous responsibility rests upon your shoulders. Social and economic conditions have given rise to a new thought in industrial accidents. Scientific and full development of that thought has created Workmen's Compensation Acts. The great experiment is about to be tried in Pennsylvania; a great popular demand is about to be met; the act is about to be tested.
>
> "I am not going to talk to you today at the outset as to the technicalities of the act. I desire to address myself to the spirit of the law and urge upon you a most earnest endeavor to enter upon your duties with a just and fair spirit toward every citizen of this Commonwealth. You have been called from various parts of this great State; your experiences in life have been different; the paths you have traveled have been widely divergent and, therefore, we must expect you to look at subjects from different viewpoints. This is rightly so, for, in thus calling you to the performance of this duty we bring

to the aid of this legislation the common experience and the common knowledge of this Commonwealth. The board is extremely anxious that you remember that this law is the law of every man, woman and child in the State of Pennsylvania; that it is to do justice to all, and that if in its enactment it does not prove of most incalculable advantage to the man who toils, and if it is not of great economic advantage to capital, then either the law is a mistake or we will have failed to properly administer it. You must see that the rights of all men are preserved; you must not know any distinction between employer and employee; there must be no arraignment of class against class, or of one element of our citizenship against another. It is our desire that you administer this law with the least inconvenience possible to employer and employee. It is your duty to go to them rather than to summon them to you. In the case of accident, your place for hearing is in close proximity to the scene of investigation. Technicalities will have no place in your rules of procedure. A determination of the truth must always be your watchword, and to arrive at this desired result technical objections must not blind your vision, nor blunt the keenness of your perceptions. Yours, therefore, is a mighty responsibility and the exercise of a wise discretion upon your part will at once demonstrate the wisdom and economic value of this great legislation."

These referees went about their tasks like real men. Their jobs were no sinecures. They were compelled to meet the men who had failed to reach an agreement. Therefore, there was marked differences of opinion where conciliation had failed. The referees, then, must find the facts, and adapt them to the law. It required men of tact and ability. It was said of the referee by Judge Finletter in BOTTO v. HAMILTON:

"In the performance of his inquisitorial powers, and as an administrative officer, for he is this as well as judge of the facts, the referee has the right to receive all the information he can get from any source, without restriction by rules of evidence. These are devised for and adapted to the orderly ascertainment of the truth in a court. They are not made to regulate the inquiries of a detective who is searching for the proofs. What the statute contemplates is both an investigation and a hearing. The referee is directed to do both. When he is investigating he is not to be restricted by the rules which apply to him as a judge. When, however, he comes to pass upon the evidence as a judge he should be guided by the rules which experience has taught are reliable."

The referees have justified their existence. The board has always sought to establish its judicial functions and independence of thought. There is no place on the board for a partisan, nor one who is wedded to any particular interest. The most unfortunate combination on a compensation board would be the selection of a man because he is an employer or of another because he is an employee or a labor representative. Such men have no more place on a compensation board nor in the referee group than judges upon the bench, selected because of race, creed or other reasons except their independence of action and their ability to weigh evidence and to reach logical conclusions. The moment a referee or a board member should be chosen from any other than these considerations, efficiency will give way to inefficiency and confidence to mistrust.

We early took the position that issues would only be determined by absolutely competent evidence, as the courts understand evidence, and that in our forum the scales of justice would tip one way or the other by the weight of competent evidence as understood in the courts of law. We would not allow a great piece of legislation to be impeached by turning it from its proper sphere as a great humanitarian means for social justice into a socialistic propaganda, by which one man's money could be taken from him and given to another without due process of law.

There has been and is now the spirit of absolute co-operation existing throughout the whole Department of Labor and Industry, as far as the observation of the Workmen's Compensation Board can justify this assertion. Every bureau of the whole Department is aiding and assisting the administration of this law to its ultimate purpose, which is the conservation of the working force of Pennsylvania, and its preservation through safety. When we announce the fact that the year of 1919 saw 103,000 accidents less than in 1916, it is a matter of greater satisfaction to us than the statement that since 1916 there have been 820,000 accidents in the State, and that 500,000 men and more have received free medical attention at a time when most needed, and have been returned to their potential activities when otherwise many of them might have run the course of infection, long-continued indisposition, loss of members and perhaps death.

We take more pride in the reduction of accidents than in the tremendous figures showing over $21,000,000 provided in death claims, over $4,000,000 of which has already been paid, or the fact that over $10,000,000 has been paid in disability cases. While we rejoice in the tremendous amount of relief that these figures indicate have been taken to our unfortunate citizens, yet we delight more in the spirit of conciliation and mutual understanding evidenced in the fact that during that time there have been 253,000 compensation agreements executed.

The old Act of 1915 met with success, it is true, but the favorable experience under it only emphasized the necessity for the Amended Act of 1919. The upward curve of the cost of living became an infallible sign pointing to increased compensation. It became inevitable that three results would necessarily come from knocking at the doors of our legislative halls. These were increased compensation, extension of time for medical service, and a reduction of the waiting period. These provisions are in line with a higher expression of our State's humanity. The crowning glory of the legislation of 1919, however, is the Rehabilitation Act, and the bureau created by it, over which Mr. Riddle now presides.

Compensation is of short duration and supplies an immediate and temporary want. It is soon spent and gone, but the permanent injury remains. Strong men are stricken down in the flower of their manhood in the very zenith of their strength. They have been changed from red blooded producers to discouraged, maimed and crippled dependents. Mr. Riddle's bureau stands ready to teach them that their greatest conquest in this life will be victory over handicap. The dark clouds of mental depression, worriment and uncertainty will be lifted, and the sunlight of hope and joy and comfort will be let into their homes through the administration of this Act.

I am proud of Pennsylvania's record in compensation. I am thoroughly in accord with the humanities of the law. I have yet to meet the writer who has penned a hostile criticism, yet I think the first place in humanitarian legislative conception should be accorded the Rehabilitation Act, and I prophesy for Mr. Riddle and his associates a most notable career, a happy experience and the gratitude of a great Commonwealth.

The next stage in the progressive development of the means of translating the State's sense of duty toward its unfortunate citizens into material relief is a social service.

Our accident reports bring to us information that a man has been injured in his work. A compensation agreement, or an award, will indicate the degree of his incapacity and will approximate the duration of his disability. Certified receipts filed by the employer, or insurance carrier, will satisfy us that proper compensation has been paid, and a final receipt will indicate that a full acquittance has been accorded the employer. But this is not all the information tht the real humanitarian desires in such cases, nor is it sufficient data concerning the home of the injured man.

Meager compensation may be seized upon by the injured workman to justify his adoption of some political or social ideas antagonistic to our democracy or to our sense of moral responsibility. These reports give us no insight into the home—no information as to the family. We ought to be equipped with intelligent, sympathetic American home visitors to be sent to that man to make kindly inquiry as to the condition of his family, to see that the children are at school, and to suggest all the relief that the State ought to hold out to one of its citizens.

This is a day when true industrial democracy must be enthroned. Great care must be exercised and tact displayed in so delicate a service, for over-zealous and self-constituted and self-termed up-lifters, ignorant of conditions and not in touch with workmen's ideals, can easily destroy the good that intelligent direction will otherwise insure.

Over 2,000,000 days were lost to industrial Pennsylvania in 1919 through industrial accidents. Most of this lost time was suffered by the 500,000 foreign-born workmen of our State. It is in such homes that the seeds of a dangerous social and political doctrine can be sown and there they will most readily take root. The standards of Americanism can easily be planted in the sick room of an injured workman. Bolshevism cannot thrive in a community of compensation laws, rehabilitation acts and social service.

When once home-making instincts are planted in a human heart there is crowded out rebellion, hatred of our institutions and disrespect for constituted authority.

The home builder is a lover of order. His mind is turned into constructive channels. Violence threatens the shrine of his affectionate regard—his home—hence he is for peace—and being for peace as an assurance of the safety of his home—he becames a supporter of the officials whose duty is to protect life and property, and in order that he may have a voice in their selection and in the making of the laws governing his home, he becomes a citizen—one of your adopted sons—an American.

Therefore, encourage the building or purchasing of homes—watch them with solicitous care. We have dotted this State with the homes of the widows and the maimed, purchased with the money the board has commuted for that purpose. At their hearthstone, keep the fires of American patriotism ever burning.

MR. WALKER: We have on the program, Mr. Robert J. Peters, who comes well-equipped with a thorough knowledge of the work in hand, as the consultant of the State and the Bureau of Employment. The knowledge that Mr. Peters has of the work that he is engaged in has been obtained by intense study, not only in this country, but in Europe, and he will present a paper this afternoon on, "The Department in Relation to Employment."

THE DEPARTMENT IN RELATION TO EMPLOYMENT.

BY ROBERT J. PETERS, CONSULTANT, BUREAU OF EMPLOYMENT, PENNSYLVANIA DEPARTMENT OF LABOR AND INDUSTRY.

Ladies and Gentlemen: The Bureau of Employment was created in 1915, called into existence by a threatening period of involuntary idleness and unemployment. You may remember, if you can recall events before the war, that during 1913 and 1914 involuntary unemployment was widespread and general and was rapidly increasing. On the Pacific Coast there were thousands of homeless and idle men who had gone to California to secure work in connection with the Exposition at San Francisco and San Diego, and were disappointed. In the middle States there was general idleness in every occupation except farming. In the eastern States many men and women were out of work and there was much distress. The idleness and suffering were most acute, of course, in the large cities, especially in New York, where probably 500,000 men were at one time out of employment.

The United States of America, and the several States of the Union, then awoke for the first time to the fact that a real unemployment problem existed in and confronted the entire country. Investigation showed that in addition to general industrial and commercial depression, a large cause of this unemployment is the seasonal nature of work in many industries, which must be more and more regularized.

The widely prevailing distress and the insistent demands for quick relief proved the necessity of complete and efficient systems of public labor exchanges, or employment bureaus, through which the jobless man and the manless jobs can quickly and appropriately be brought together.

In addition to this, adequate supervision by the Government of private employment agencies was clearly proved, in order to protect the needy and more or less helpless workers against the exorbitant demands and impositions placed upon them by unscrupulous brokers in human services.

Accordingly, on June 4, 1915, the Commonwealth of Pennsylvania enacted Act No. 373 of that year, creating a Bureau of Employment, and on June 7, 1915, Act No. 397 of the same year, regulating private employment agencies.

The Pennsylvania State Employment Service was thus created by statute in order to prevent and remove unemployment through the following means:

1. By finding jobs or work for idle men and women through advertising, through canvassing the stores, industries, farms, railroads, etc., where labor is normally needed.

2. By establishing employment bureaus or exchanges, where a census is made, and kept up-to-date, of open jobs and of men and women seeking and waiting for work.

3. By preventing or reducing seasonal employment through co-operation with or pressure upon the employer to distribute his work, if possible, more evenly throughout the year, thus avoiding a rush and excess of work at one time and idleness and a shutdown at another period.

4. By the creation of work or employment in quiet and dull periods, through inducing the State, county, township, city or borough to undertake and put through public improvements, such as roads, sewers, paved streets, boulevards, parks,

bridges, buildings, etc., etc., which will furnish regular and continual labor for many persons in widely scattered sections of the State who, otherwise, would be unemployed.

5. By accurate and timely information of the supply of and of the demand for labor in all parts of the Commonwealth, whereby a surplus in one place may quickly be sent to another district where there is a shortage.

Provision is made for securing suitable work for juveniles between ages of fourteen and eighteen years, who leave school lawfully in search of employment.

The reliability and fitness of an applicant for the particular position which he is to fill, must always be taken into consideration in referring him to an employer; but, otherwise, no discrimination or favoritism can be practiced.

Neither the Bureau of Employment, nor any official of the Bureau of Employment, may "assist in any way whatsoever, any person, firm, association, or corporation who is a party to an industrial dispute, strike, or lockout." Nor is this Bureau called upon to decide when a real industrial dispute, strike, or lockout does exist. It is now proposed that such issues be referred to the Board of Mediation and Arbitration, whose report is to be submitted to the local representative council for a decision, from which an appeal, if desired, may be taken to the Industrial Board.

To remedy the evils of unemployment and to prevent the recurrence of the distress of 1913 and 1914 (especially the winters), the Bureau of Employment was created in June, 1915. Already in February of that year, unemployment began to show a decrease, especially in the eastern States and in the industrial centers. The effects of the European war were beginning to be felt. As war contract after war contract and munition contract after munition contract came in, manufacturing plants were greatly enlarged or were created to fill rapidly these orders and the unskilled, semi-skilled, and skilled workers were quickly recruited and placed into steady employme: ...es, time—piece and bonus.

The supply of ...or shrank very quickly through the emigration of n... ...ope to participate in the war there,' and through th... ...on into this country of unskilled labor from any forei...

With the e... ...to the European war and with the drafting of th... ...ng men into the army, the labor conditions of th... ...orresponding duties of the Bureau of Employment ...n overwhelming surplus of labor, the transition wa... ...o an acute shortage of labor of every kind and des... ...ires to the present time. Now, instead of finding j... ...women, the Pennsylvania Employment Service is e... ...g men and women for the vacant and waiting jobs.

The short... ...ral, geographically, commercially, and industrially ...nformed persons. Every State in the Union rep... ...ded, and domestic labor: and nearly every line o... ...ulture, is calling urgently for skilled and unskilled...

The causes ... labor are numerous and are not fully understood by ... is that more work is now being done than ever bef... ...a far grander scale.

Since 1914, ...unusually large contracts, many of the industrial and ...is State and country have been enlarged many ti... ...ny new plants and factories have come into being. T... ...every kind and description are many times their ord...

Never before in the history of this Commonwealth, or this country, have so many and so large public works and improvements been undertaken at one time by the Nation, the State, the county, the township, and the city, borough or village. The State highways in Pennsylvania, the South Hills tunnels in Pittsburgh, the new parks and boulevards of many of our cities and boroughs, are examples of the undertakings cited.

You may recall that, in November, 1918, upon the signing of the armistice, there was widespread fear of unemployment and hard times, due to the ceasing of war orders and contracts and to the release from the army of large numbers of men who might not quickly find their way back into steady and regular employment. Consequently, the governors of many States of the Union and the mayors of most of our cities urged many public works and improvements in order to furnish work for the returning soldiers and for the workers released from the industries, closing through the ceasing of war orders and contracts. Due to the universal loyalty of the country and to the thorough training in co-operation derived from the several Liberty Loan, Red Cross, and other campaigns, the responses to these appeals from the mayors and governors were numerous and favorable.

As a result our States, counties, townships, cities, boroughs, and villages have, individually and without mutual consultation, voted and started many public improvements and enterprises, without counting the labor cost and without forecasting if there is sufficient free labor to complete all the public works undertaken. After this blind action, society is awake to the fact that it has bitten off a larger piece of work than it has available and suitable labor teeth with which to chew it.

The shorter working day is, also, a cause of the present shortage of labor, which is frequently overlooked. If each man works fewer hours or minutes per day, more men are needed to keep up the production to a fixed amount every day.

Service in the army and navy is a cause of labor shortage, but the shortage from this cause is much smaller than many suppose. Of course, some workers who entered the service, have not yet returned to work. A small number were killed; another small number were crippled and disabled; a few yet remain in the army and navy and may never, or not soon, return to the ranks of labor. But these numbers are relatively small and are almost negligible.

There are a very few laborers now in this State and country who are voluntarily idle. They are living upon their savings from their high war wages and upon their accumulations of Liberty bonds which they are gradually spending. But these are very few and their number is wholly negligible.

The shortage of skilled and semi-skilled labor is due largely to the fact that it has not been developed and trained rapidly enough to keep pace with the demands from the greatly enlarged industries as well as from the increased number of new industries.

Female domestic labor is increasingly scarce. During the war, women replaced men in many lines in many industries and succeeded so well in their new occupations that they are loth to return to domestic service, and their employers are loth to lose them. Of course, domestic service as an occupation has been declining in this country for many years for reasons which have carefully been investigated and which are generally well understood.

The scarcity of common or unskilled labor is the most serious labor shortage now facing this Commonwealth and Nation. It is becoming so general that persons in stores, industries, railroads, etc., find it increasingly difficult to get manual labor done.

The causes of this shortage of unskilled labor are not fully or generally known to the public. For many years this class of work has been done for us largely by foreigners back to our Civil War. Immigration was a virtual ceasing of immigration from Europe and Asia.

Many of the United States in thousands of able-bodied young men who have come to this country for work, but the war has stopped immigration and the supply of unskilled labor has been cut off.

by foreigners. Since August, 1914, when the war in Europe broke out, many unskilled laborers returned to Europe to serve in their national armies. During this period there has been little or no immigration of foreign labor into this country. During the war the foreigners could not leave their native lands. Since the war, high wages, restrictive legislation, and other inducements or causes have detained them in Europe.

Since January 1, 1920, about 53,000 foreigners entered the country via Ellis Island, while about 61,000 left the United States through the same port. Most of the latter were going to Poland and Czech-Slovakia to remain. From November 11, 1918, to January 1, 1920, immigration and emigration were nearly equal, approximating 275,000. In January 1920, 23,000 foreigners entered and 24,000 foreigners left the country. In February, 1920, 22,000 arrived, while 25,000 foreigners departed. It is estimated that during this month there will be 36,000 departures and 24,000 arrivals of foreigners.

Another cause of the shortage of unskilled labor is to be found in the minute sub-division and specialization of occupation in many of our larger industries, by which an unskilled laborer is trained and graduated into a skilled worker within a few days. Henry Ford, famous for many things besides his "jitney," can do more than turn out a finished car every two minutes. He can make an expert one-piece iron molder (expert enough for his needs) in three days and a finished coremaker in two days. In fact, if the unskilled laborer cannot master his job in two days, he is shifted to an easier occupation which he can learn in that time.

A large rubber corporation trains a clever unskilled workman into an expert tire-finisher in eight weeks; if the worker is slow, dull and stupid, the training will take thirteen weeks, but by that time even he will make an expert tire-finisher.

This minute sub-division and specialization of occupation is depleting the ranks of common or unskilled labor far more and more rapidly than any one can realize.

War service has also reduced the number of unskilled laborers. Many men entered the service from the ranks of common labor, who left the service no longer unskilled workers, but so-called "war mechanics," and they are not to be ignored. They are a semi-skilled fraction to be considered and reckoned with. While in the service, they received short, intensive training from six to 20 weeks in telegraphy (wire or wireless), gas engine operation and repair, truck-driving, carpentry, pipe-fitting, lead-burning, acetylene welding, forging of iron and steel, and many other occupations, followed by eight to 12 months of practice and experience in their one small and specific task, with the result that they are no longer common, unskilled, manual laborers; they are now specialists and experts in their minute, specific occupations.

The foremost problem or task before the Pennsylvania Bureau of Employment now is to make a census of the labor reserve or to find it if it exists, wherefrom unemployed men and women can be recruited to fill the vacant and waiting jobs. This can be done by judicious advertising and through personal canvassing by members of the employment service. Not much relief can be expected or hoped for from this source, because the labor reserve is relatively smaller now in this State than probably ever before in its history.

The placement of labor in this Commonwealth and the transfer of labor from places, where there are possible surpluses and releases, to places where a general shortage exists, are greatly hindered or prevented by the general shortage of houses throughout the State. It is impossible to transfer labor to any locality where the housing facilities are wholly inadequate, unsanitary, or non-existent. This general shortage of houses greatly handicaps the bureau in the distribution of labor throughout the State according to the law of supply and demand.

Probably the most serious problem confronting all employers today is the frequent turnover of labor with its high cost. With this matter the State employment service is greatly concerned. Under no circumstances does it wish to add to, increase, aid, or abet the present high turnover so generally prevalent in commerce and industry. In every office of the bureau efforts are strenuously made to keep down and reduce the turnover by refusing to help employed men to change jobs, except under special and extenuating circumstances, and by urging the restless men and women workers to remain in their present positions. No efforts are encouraged to make high placement records at the expense of turnover. Retention in present jobs are frequently more difficult to effect than placements and are reckoned as more important and valuable.

But the high costly turnover still goes on. Employers are enticing labor from employers. Employers in one city or borough are attracting labor from employers in another city or borough. The Inter-State stealing of labor of every kind is conducted openly and shamelessly through widely distributed advertisements and through open and personal canvassing by labor scouts or solicitors in the regular employ of the corporations which they represent.

These evils the bureau is powerless to ameliorate or prevent. All it can do is to investigate each instance and to see that no fraud is practiced and that Act No. 397 regulating private employment agents, is not disobeyed.

A partial remedy, which would restrict and reduce somewhat the Inter-State stealing of labor, would be to require every labor scout or solicitor of labor from another State to take out a license from the Commonwealth, under which he may recruit labor in accordance with specified terms and under which he must submit to the bureau regular detailed reports of his activities. This remedy would surely reduce the systematic theft of labor by one State from another and would regulate a traffic, which unrestricted will, eventually become a cause of Inter-State trouble.

Here again the shortage of good, sanitary houses comes in as a contributory cause of labor turnover. Recent private investigations in one town found that 20 men had moved from that town in one week on account of bad housing conditions. In a certain city, where the housing facilities are abominable, it was admitted by the proprietors of a large industry that these bad housing conditions cause at least 50 per cent. of the labor turnover in that locality.

In these days of high wages, universal and free education, and rising standards of life, the working classes, native or foreign, skilled or unskilled, cannot be expected to remain long in inadequate, unsanitary, or uncomfortable homes. They will move surely and quickly to better conditions and localities.

An authority on labor conditions and labor turnover in this State recently said very truly in an employment conference: "An effective employment bureau should not only serve the immediate purpose of a labor exchange for the accommodation of both the employer and the employee, but, in addition, should be an instrumentality in the larger, broader, social service of contributing its share to the social and vocational progress of labor for the purpose of modifying the causes of the expensive labor turnover, with which an employment bureau is constantly dealing, and which is a social and moral detriment and an enormous economic loss to the country."

Another important function of the Bureau of Employment is the collection and judicious distribution of labor information throughout the State, relative to wages, supply, demand, shortage, surplus, housing, and other facts of value to both employer and employee. With the co-operation of employers, employees and labor organization, it is possible to collect and distribute discreetly timely information of probable releases of labor in moderate or large numbers, and of probably similar

demands for labor, whereby the labor shortages and surpluses may quickly be absorbed by the general labor market of the State.

In a recent address to employers and employment managers of this State, Commissioner Clifford B. Connelley said very truly and wisely: "One of the most important matters in social and political life is employment for every one. Proper work and suitable employment are among the foundation stones of the structure of social order and peace. Regular work and regular pay mean regular food, homes, clothing, and a well-ordered life for the individual and for the family. When everyone is happily busy at his chosen vocation, there is little chance for mischief or social disorder to arise.

"On the other hand, idleness, irregular work, or unsuitable and uncertain odd jobs, mean cheaper, less, and less certain food, poorer and unsuitable homes, lack of sufficient clothing, and badly ordered and more or less hazardous, hand-to-mouth lives, which lead soon to hunger and distress. These abnormal and unsocial conditions are the fertile fields for disorder, strife, revolution, anarchy and Bolshevism.

"To avoid these very conditions, arising from unemployment or irregular and uncertain employment and leading to social revolution, State Bureaus of Employment have been established during the past 15 years by a number of the States of the Union. Their prime purpose is to preserve social and political order and to insure the safety of society through stabilizing labor conditions in commerce, agriculture, and industry, and through a more economic distribution of labor where and when needed throughout the State."

STATE EMPLOYMENT BUREAU.

Summary of Operations for Year 1919.

MONTH.	APPLICANTS.	VACANCIES.	REFERRED.	PLACED.
January, February, March	Under Supervision of U. S. Government.			
April,	21,505	20,602	10,566	10,113
May,	28,881	32,088	15,766	15,134
June,	29,688	42,977	23,550	21,999
July,	29,822	38,529	25,183	23,893
August,	35,246	64,632	32,106	28,381
September,	24,246	60,806	21,190	19,361
October,	31,059	56,919	26,049	24,476
November,	20,526	35,530	17,406	15,681
December,	18,075	29,761	15,108	14,121
Totals,	239,048	381,814	186,924	173,159

72.4% of the persons applying for positions received work.
42.7% of the persons asked for by employers were furnished.
7.3% of the persons sent to positions failed to receive work.
18.1% of the applicants were holding positions when they asked for work.
8.3% were not capable of filling positions when they applied for them.
1.2% were applicants for executive or technical positions for whom openings could not be found.

PERCENTAGE OF PLACEMENTS BY TRADES.

Agriculture,	1
Building and Construction,	10
Clerical, Professional and Technical,	4
Clothing and Textile,	2
Domestic and Personal Service,	2
Food and Tobacco,	1
Lumber,	1
Metal and Machinery,	40
Mine and Quarry,	8
Paper and Printing,	1
Transportation and Public Utilities,	10
Common Labor,	20
Service Placements, April, 1919, to March 1, 1920,	48,540

By referring to the table showing the placements made by the officers of the employment service, it will be seen that during the last nine months of the year 1919 we were instrumental in securing positions for 173,159 people. Assuming that the average daily wage during the period was $5, which is certainly not a high estimate considering the wage scale of the period, we will have a total of $865,795 per day earned by people placed in position through our instrumentality.

Another view of the same matter is presented thus. Suppose that on the average each person received work a day earlier than he would have received it had he not been able to draw on the facilities presented by the employment service. It will readily be seen that wages aggregating the amount above stated was saved workers largely by reason of the existence of this service.

Our calculations are based on one day's loss or gain in wages. This is a conservative estimate as our experience has shown that by reason of giving out information concerning employment we are frequently able to save many days of delay and many miles of travel as well as expense.

It requires more than a casual observation to show what a vast army 173,159 workers make and the significance of $865,795 per day gained or lost in wages. Nor will a superficial examination disclose the effect of this money earned and expended by workers throughout the State on the many lines of commercial and industrial activities.

During the month of January, 1920, 20,216 persons were placed by the several offices of the Pennsylvania Bureau of Employment; 928 were women, of whom 702 were assigned to domestic or personal service, and 226 were employed as clerks, saleswomen, factory workers, etc. Three thousand seven hundred twenty-one service men were placed into 2,125 common labor jobs and into 1,596 semi-skilled and skilled positions. Fifteen thousand, five hundred sixty-seven civilian men secured positions, of whom 8,995 were common laborers, and 6,572 skilled and semi-skilled.

These placements represent a cash value in potential wages of slightly more than $100,000 a day and of more than $2,000,000 a working month.

These figures, though only a hasty and rough estimate, understate the wage value in every case. They suggest, therefore, very strongly, the social, commercial, and industrial value to the employee, to the employer, and to the Commonwealth of Pennsylvania, of the State Bureau of Employment.

During the month of February, 1920, 14,767 persons were placed by the several offices of the Pennsylvania Bureau of Employment. Of these 2,629 were ex-soldiers or service men; 11,213 were male civilians, and 865 were women; 597 women were placed in domestic or personal service, and 268 women received employment as clerks, saleswomen, factory workers, etc., etc.; 1,744 ex-soldiers and service men secured jobs as common laborers; 885 were assigned to clerical, semi-skilled, skilled, sales and executive positions; 4,849 civilians (male) were placed in clerical, semi-skilled, skilled, sales and executive positions; 6,364 were employed as common laborers.

These placements represent a cash value in potential wages of more than $60,000 a day, and of more than $1,500,000 a working month of 22 to 24 days.

These figures though only a hasty and rough estimate, understate the wage values in every case. They are lower than the figures for January, because the January report included five (5) weeks, or a working month of 27 to 30 days. During February, the State Employment Bureau offices were closed on two holidays, February 12 and 23.

MR. WALKER: We will next hear from the "trouble man" of the Department. Everybody brings his troubles to Mr. Tracy. I do not think Mr. Tracy needs any formal introduction. Although a new member of the Department, I believe he has met all of you. He will present a paper this afternoon on, "The Department in Relation to Mediation."

THE DEPARTMENT IN RELATION TO MEDIATION.

BY WILLIAM J. TRACY, CHIEF, BUREAU OF MEDIATION AND ARBITRATION.

Chairman, Ladies and Gentlemen: As Mr. Walker said, I am a "trouble man." I do not know whether I make it or settle it, but the Bible says, "Blessed are the Peace Makers." That is a very excellent motto for our Bureau, bestowed on us nearly 1900 years ago in the Sermon on the Mount. With such a fine motto of divine origin, indeed it was a foregone conclusion that in due course of time we would get a Bureau to go with the motto. So in the fulness of time, a mere matter of some 1883 years after we got the motto, we got our Bureau.

Under Act 267, Sections 17, 18 and 19, of June 2nd, 1913, the Act creating the Pennsylvania Department of Labor and Industry, a Bureau of Mediation and Arbitration was established in this Department. This bureau is composed of a chief, a secretary, five mediators and one investigator, the official Pennsylvania peacemakers to be blessed, or otherwise, according to each individual's personal attitude toward the Sermon on the Mount.

We are aware, of course, that some people don't believe in the practical possibility of this sermon. They argue that the sermon is all right as a sermon, but that in this cold, cruel, practical business world, the peacemakers will have a tough time of it and get the worst of any fight they try to stop. But the public long ago has realized that it gets the worst of any industrial fight that isn't stopped, and that is why the public at last, through its representatives in the legislature, has granted State authority to our industrial peacemakers. And while these industrial peacemakers of our Bureau of Mediation and Arbitration may not earn the immediate blessings of either side to any industrial dispute, they feel sure at least of the blessings from the general public.

Then, in time, surely within another 1883 years, we hope also to win the blessings of the industrial disputants when they realize that after all, every fight is fought only for a settlement; that no matter how well, or how long, or how bitterly they fight, ultimately they must get together and agree on some working basis, and, therefore, if ultimately they must get together, why not get together before, instead of after the expensive, ruinous fighting?

The law and Department rules governing the operation of the official peacemakers of the Pennsylvania Bureau of Mediation and Arbitration provide that wherever a dispute arises between an employer and his employees, which cannot readily be adjusted between themselves, the chief of the Bureau of Mediation and Arbitration shall promptly proceed to the location of the dispute and endeavor by mediation to effect an amicable settlement of the controversy. If such a settlement cannot be effected, the dispute may be arbitrated by a board composed of one person selected by the employer, one person selected by the employees, and a third person selected by the first two chosen arbitrators. The third member of the arbitration board shall be selected within five days after the dispute has been submitted for arbitration. If no third member is selected within this five-day period, the chief of the Bureau of Mediation and Arbitration shall act as a third member of the arbitration board and be its chairman.

The dispute in arbitration shall be submitted in writing to the arbitration board, together with an agreement binding both parties to the dispute to abide by the decision of the arbitration board. The decision of the arbitration board shall be

rendered within ten days after the completion of its investigation and copies shall be filed with the Bureau of Mediation and Arbitration and with both parties to the controversy.

The Commissioner of Labor and Industry from time to time assigns such assistance to the Bureau of Mediation and Arbitration as he deems necessary to meet the requirements of the bureau. The Bureau of Factory Inspection, for instance, is in a position to greatly aid the Bureau of Mediation and Arbitration through the co-operation of its factory inspectors. These inspectors keep constantly in touch with conditions in their respective localities and frequently are in the best possible position to explain the peculiar attitude of either or both sides to an industrial controversy. These inspectors are also in a position to keep the Bureau of Mediation and Arbitration fully informed about any new disputes arising between employers and employees. The Bureau of Mediation and Arbitration is also aided by the co-operation of the Bureau of Employment, which is estopped by law from furnishing employment to men at points where industrial disputes are unsettled.

This co-operation between the various bureaus in the Pennsylvania Department of Labor and Industry, makes for speed, and speed, of course, is an essential element in settling disputes. It is a well-known fact that the longer a fight goes on, the harder it is to settle.

If the Bureau of Mediation and Arbitration were never notified until after strikes or lock-outs had been put into effect, many avenues of mediation would be closed. But when a State mediator arrives at the scene of trouble, before real hostilities have started, settlement can often be effected with great saving in both money and time to the parties directly interested and to the general public.

That there is ample room for such peacemaking activities may be illustrated by the following statistics. The number of strikes in Pennsylvania during the last four years were:

1916	1917	1918	1919
316	498	317	484

Total number of strikes for the four years, 1,615.

The most notable changes in 1919, as compared with 1918, are the increase in the number of strikes in the textile industry from 31 to 114, in the tobacco industry from 1 to 37, and in the miscellaneous trades from 8 to 40. These strike increases are in those industries which employ a great many women workers at less pay than received by men.

The number of working days lost through these disputes during the last four years is:

1916.	1917.	1918.	1919.
3,574,860 days	1,431,328 days	507,937 days	13,943,202 days

The total number of days lost, 10,179,243.

The amount of wages lost is reported as follows:

1916.	1917.	1918.	1919.
$7,184,296.	$4,694,769.	$2,212,304.	$13,943,502.

The total amount of wages lost for the four years, $28,034,871.

The average duration of strikes during these four years was:

1916.	1917.	1918.	1919.
49 days.	26 days.	10 days.	26 days.

These figures do not include wages lost, nor numbers of days lost in the coal or the steel strike.

The wonderful improvement in conditions shown by the figures of 1917 and 1918 as compared with other years, is due largely to war conditions, of course. But they are highly significant as demonstrating what can be accomplished by such patriotic co-operation as was possible when both employers and employees realized that production had to be maintained at any cost to beat the common foe.

Now, if for the common external foe of militarism, we substitute the common internal foe of wasteful fighting, can we not, with a little co-operation and common sense obtain the same happy results in times of peace as we did under the pressure of war?

This is not merely a plea for settling annoying quarrels or avoiding useless enmities. It is a plea for protecting thousands of working families against useless privations. It is a plea for preventing wanton waste of earnings and production powers which add to the cost of living. It is a plea for the patriotic conservation of our industrial resources and efficiency so that our country may be fit and able to compete in the world markets. It is a plea for plain, American common sense in getting together for the common good, rather than rattling sabres every time we disagree.

If we can accomplish this, and the war figures show that we can if we honestly and patriotically try, and if we of the Bureau of Mediation and Arbitration may contribute our share toward this happy accomplishment, we shall feel that, indeed, "Blessed are the Peacemakers!"

MR. WALKER: Now, the next speaker will address this body on the subject, "Industry and the Industrial Board." I know of no person better equipped to make plain the relation between the Industrial Board and industry than Mr. Fred J. Hartman, who is secretary of the board. I take great pleasure in introducing Mr. Fred. J. Hartman, secretary of the Industrial Board.

INDUSTRY AND THE INDUSTRIAL BOARD.

THE BUSINESS OF GOVERNMENT.

BY FRED J. HARTMAN, SECRETARY OF INDUSTRIAL BOARD.

The business of government is to protect industry and not to control it. This principle needs to be stressed today and in its actual working out offers a real solution to many of our industrial problems. For the government to operate the industries is about as logical from the standpoint of argument and illogical from the standpoint of experience as the Scotch lad who coveted the parson's cow.

The story goes—that a Scotch lad said to the minister, "Do you believe in prayer?"

"Most certainly I do," was the reply.

"But," insisted the questioner, "do you believe if I prayed hard enough that God would give me a cow like yours?"

"Certainly, if you had equally good reasons for possessing it and your faith was sufficiently strong."

"Then," came the immediate rejoinder, "you give me your cow and you do the praying."

Government in a democracy is not constituted along lines to control industry and the events of the past few years lead us to believe that an autocracy has not made an overwhelming success of the job.

THE INDUSTRIAL BOARD—A SAFEGUARD TO OUR INDUSTRIES.

In this Commonwealth we are fortunate in having an agency of government which, if understood adequately and made to function properly, is one of the greatest possible safeguards to the industries of Pennsylvania. The Industrial Board of the Department of Labor and Industry is as old or as new as the Department itself. It occupies a unique position in the field of labor legislation.

It has been necessary, for this reason, for the board to move slowly and to do real pioneer work.

SUMMARY OF THE WORK OF THE BOARD.

The experience of the past five years may be summarized, briefly for our purpose, by pointing out the following concrete achievements:

No less than 20 acceptable rulings of a general nature have been made, bearing directly upon the Woman's Act of 1913, and 30 rulings on the Child Labor Act of 1915. Thirty safety standards, or codes of safety rules, covering some of the most important industries of the State, have been issued and several new ones are now in the process of formulation.

Over 150 mechanical devices have been tested and approved as safe for the industries of our State. The beginnings of a museum of safety appliances have been made—and it is hoped that this venture may be more than a museum; rather, that it be a laboratory for experiment and research along the lines of industry, to serve employers, employees and State officials in a large and adequate way.

In this work the members of the board have had the assistance of hundreds of men and women in industry in this State and other states, and of Federal

and State government officials—all of whom contributed largely of their time and experience, without financial recompense from this Commonwealth. In the working out what has been done a story might well be written that would reflect credit upon the legislators who created the board, and upon the people who have been selected to carry out the wishes of the framers.

It is only fair to state at this time, that during the war period when sinister influences, from without and from within, were brought to bear upon the members of the board to lower the standards so that "production might be increased," that the board took the stand, that our cause, being a righteous one, demanded the maintaining of standards at all odds; and, in a very real sense stood as firmly for this conviction as did that noble band of heroes who fought contending that, "They Shall Not Pass."

HOW THE INDUSTRIAL BOARD SAFEGUARDS INDUSTRY.

This hurried survey gives us a background for the claim that in the Industrial Board the industries of the State have a real and effective safeguard, the importance of which will grow with the years. There are three outstanding reasons for this claim:

1. The representative organization of the board.
2. Its far reaching powers.
3. Its program of work.

ORGANIZATION.

From the standpoint of representative organization, the Industrial Board consists of five members.

1. The Commissioner of Labor and Industry as chairman.
2. An employer.
3. A representative of the employe.
4. A citizen at large.
5. A woman.

Stated in terms of service, it consists of:

(a) The Department of Labor and Industry charged with the responsibility of enforcing the labor laws of the Commonwealth, organized as the Bureau of Inspection, Division of Hygiene and Engineering, Bureau of Mediation and Arbitration, Bureau of Employment, Bureau of Compensation, Bureau of Rehabilitation, headed up by the Commissioner.

(b) Of the manufacturing, building, transportation and other interests as represented by the terms corporation, firm, company or private business enterprise.

(c) Of the wage earners or workers whether organized or unorganized.

(d) Of the consumers, or the general public.

(e) Of that constantly increasing factor in industry—the woman, and as we trust that constantly decreasing factor, the child in industry.

Stated in figures, almost the entire population of Pennsylvania would be included. In the final analysis it is perhaps the simplest form of governmental machinery, the nearest to the ideal in industrial relations, consisting of the State, the public, the employer, the employe and the woman in industry. Like the proverbial tent of the Arab, it can be folded and carried from place to place with ease; but, when spread out for service, it covers the entire industries of the Commonwealth, included under the Department of Labor and Industry.

POWERS.

The broad powers of the Industrial Board may be classified as, (1) the right to investigate, and, (2) the right to regulate. Two significant words cover its

duties under the investigation powers; enforcement and effect; meaning that the board has been given the power to investigate the enforcement of labor laws, thus serving as a clearing house for the work of the Department of Labor and Industry, and also to discover the effect of the provisions of the law upon industry. Each board member, moreover, has the power to make personal investigation of all establishments in the Commonwealth where labor is employed. Stated in the words of the law, the board is empowered "to provide reasonable and adequate protection for the life, health, safety and morals of all persons employed in industrial establishments."

The right to regulate has often been met with the query, "What is the status of the rulings of the Industrial Board?" Our answer is, "If our financial dealings always had as sound a basis as the rulings of the Industrial Board, there would be little occasion for losses or failure in business."

Each ruling of the board has a four-fold backing, viz.: (1) The board is empowered by law to make rulings; (2) the ruling must be based upon the labor laws of the Commonwealth; (3) each ruling must stand the "acid test" of a specialized form of public opinion, which we may term "industrial opinion," and (4) a ruling if found improper may be changed or rescinded without much delay or difficulty.

This latter may seem like a weakness, but, paradoxal as it sounds, this is the real strength of the rulings of the board, for unlike a law passed by the legislature, a ruling of the Industrial Board may be altered, amended or repealed soon after its promulgation if found inconsistent or contrary to the best interests of the industries of the Commonwealth.

PROGRAM OF WORK.

The final reason for the claim that the Industrial Board is an effective safeguard of the industries of the State is because of its working program. Commissioner Connelley, soon after taking office, was impressed with the excellent pioneer work of the board and recognizing the great importance of such an organization, named the Industrial Board as the Board of Directors of the Department of Labor and Industry. In order to render the greatest possible service and to cover the full intent of the law creating the board, as he saw it, he divided the work of the board as follows:

1. The Woman and Child in Industry.
2. Industrial Relations, including employment, Americanization, labor disputes, etc.
3. Industrial Surveys, health and sanitation, publications etc.
4. Safety standards and safety appliances.

This division of duties provides that each member of the board has a specific service to perform and the work is co-ordinated by the monthly meetings of the board sitting as a committee of the whole.

To illustrate the method of work for each committee, a glimpse of the work performed by the safety standards committee may be given. The committee is occupied with the revision of the safety standards now in effect. A typical example of what this means may be seen by looking in upon the committee on revising the safety standard applying to ladders. To the uninitiated, a ladder seems an insignificant factor in industry and yet it is a known fact that a great proportion of the accidents in industry are due to defective ladders and falling from ladders. One will be surprised to learn that there are at least 14 or 15 types of ladders that need be defined as for use in our industries.

The committee working on this code consists of representatives of manufacturers the ladders and users of the number of twenty connected with the prominent industries of the State. The method of procedure may be illustrated by the insistence on the part of the user of the ladder that "the side-rails be strong and clear of knots."

The manufacturer takes the stand that while this is the ideal to reach after, "it is impossible to get lumber with such specifications, and in addition, the expense would be prohibitive." This gives the employer, or the purchaser of the ladder, his cue and he objects on the ground that it costs too much. We then have the industrial eternal triangle or problem that arises in formulating a safety standard. The chairman of the committee, a member of the Industrial Board, injects a few remarks bearing upon the responsibilities that rest upon the committee. A member reminds the committee, "We must not forget that we are charged with a work of preventing accidents to the workers in our industries." As if by magic the opposition begins to fade away and the conclusion is reached that "side-rails may have certain number of knots, but that they be at least an inch from the edge and a certain distance from the rung-hole. And thus, item by item, the various provisions are considered and a safety standard is built.

SAFETY WORK—THE WAY TO THE HEART OF INDUSTRY.

If anybody doubts the leavening influence of the safety movement upon the industries of the State, it is only necessary to get in touch with the work that the Industrial Board is rendering through its safety standards committee and other committees. One will soon be convinced that the way to the heart of industries is by way of the safety movement. Nobody can be near the heart of industry and feel the throb and thrill of it, proclaiming the "All is well with industry," in spite of the apparent unrest that seems to be on the surface these days.

MR. WALKER: "Co-operation of the Employer with the Inspection Bureau," is the subject which has fittingly been assigned to Mr. J. J. Coffey, Supervising Inspector, Department of Labor and Industry, Philadelphia, Pa. I am sure Mr. Coffey is able successfully to secure results by co-operating with the employer rather than by exercising the least power. He will, I presume, tell us how he is able to accomplish the results that I know have been accomplished.

CO-OPERATION OF THE EMPLOYER WITH THE INSPECTION BUREAU.

BY J. J. COFFEY, DEPARTMENT OF LABOR AND INDUSTRY.

Mr. Chairman, Ladies and gentlemen: Before starting on my little talk, as it will be a very short one, I want to express my appreciation to the Commissioner for sending me such an easy subject. I do not think we need any talk on this subject. Mr. Mackey has covered the point that since 1916 accidents have been reduced from 250,000 to 150,000, or approximately 40 per cent., and realizing that these accidents have reduced in four years' time 100,000 or 40 per cent., it goes without saying that we have the co-operation of the employer, because it would be a physical impossibility to attain these results without co-operation.

We have their co-operation, and we feel, I can say without fear of contradiction, that the employees have the equal co-operation of the Bureau of Inspection. I say this about the employers and the same thing about the Manufacturers' Association of Pennsylvania, which has given co-operation for four years, and again I can say that it has had our co-operation.

This great reduction of accidents has been a gratifying reduction from the beginning of the Compensation Act. There was some reduction before, but the great showing was since that time. In 1916, 250,000 accidents approximately of which the sum of $25,000 went for fatalities. In 1917, it was reduced to 220,000, in 1918, further reduced to 180,000, and in 1919, that reduction was made to 150,000 accidents.

Now, knowing as all you people do, the part that the employers play in the reduction of accidents, it goes without saying that we certainly had that co-operation, because what we can do to it in the police department is the mechanical safeguarding, and that only takes care of a very small percentage of those accidents. The main thing is education, and the people who have been here today and during the week, and spoken on the accident prevention, each and every plant representative has shown more than that 40 per cent. Some places have shown less.

You heard yesterday of the good work done by the electrical people of Pittsburgh. The electrical people of Philadelphia have done equally well. I was talking to a representative, who said that last year's reduction was nearly 50 per cent. over 1918. The United Gas Improvement Company, Mr. Douglas said that their reduction in 1919 over 1918 was over 40 per cent. and we can go on and name a number of others. In the brick industry, we have a refactory company showing a big decrease. This accident prevention game is a specialist's game. If any of you are injured, you go to the best surgeon you can find for attention. This accident prevention demands the very best safety engineers to be had.

There has been a great deal of stress placed upon the foreman, upon accident prevention, as the key to the situation, but from what I have seen I think it is absolutely necessary in any fair size or large size plant to have a successful safety engineering department. Of course, it is up to that safety engineer to show how these results should be obtained, and then if he has the big boss back of him he can get that co-operation of the foreman.

I should like you all to think of these industrial accidents as the industrial casualty list. During the late war we were all interested in the casualty list. Last year, our best year, showed an industrial casualty of 150,000. During the same period, we had killed in the war some 50,000, or approximately 35,000 per year.

Now, the industrial casualties of the United States show a casualty list of approximately 30,000 to 36,000 per year, or equal to that of the war. But for some inexplainable reason, the American people, the people of Pennsylvania, while I think that we are in the lead in the reduction of accidents, has not been sufficiently interested in this accident prevention; when you think of the casualty list—the killed as great as that in the war during the same period.

Some, I think, have asked the question, "Does safety work pay?" There is no question about it, and the one thing is to get to the right people, and I feel that if it is taken up with any business people, any organization, and you reach the right party, there is no question but that he will be interested; not only from a humanitarian standpoint, but that he will be interested from dollars and cents, and to save time that is the quickest way to appeal to him. Any man not interested is a traitor to his country. But you do not need to go to that point. Show him dollars and cents and you need not show him the humanitarian side.

Mr. Fonda remarked that their reduction shows less than two days per man per year of lost time during the last year from accidents. Now, in numerous places, numerous companies have shown about the same result. In one company—I was talking to a representative the other day—the Disston Saw Works, employing approximately 3,000 workers in 1916, lost over 5,000 days from injuries. They showed a greater reduction each year until they had only a loss of 1,000 days, and they are justly proud of their record of 1,050 days loss and retaining practically the same organization in numbers. I think that we could go on over any number.

You people representing companies have practically the same experiences, for as stated before, it is you people represented here today that enables the State to show a reduction of 40 per cent., because there are many people who could not be reached that have not shown any interest. It is the inability of people to have reached them to show them how this game can be played.

This morning I received a record from the Carbon Steel Company, of Pittsburgh. About a year ago in September, 1916 and 1917, with 1,464 men employed they lost 4,502 days while with this year they have cut it down to, I believe, approximately 1,683 days. I have just mentioned a few of these. We have many of them. It takes time to go into all of this. I do not know of any thing further that need be said on this subject, because we certainly have that co-operation, and the results speak for themselves.

MR. WALKER: It is true that the cause of accidents is due mostly to the non-safeguarding of mechanical hazards. We are now going to hear from Mr. Francis Feehan, Department of Labor and Industry, Pittsburgh, Pa., on the subject of. "Safeguarding the Mechanical Hazard," and he will tell us how he has accomplished results.

SAFEGUARDING THE MECHANICAL HAZARD.

BY FRANCIS FEEHAN, DEPARTMENT OF LABOR AND INDUSTRY, PITTSBURGH.

Mr. Chairman and Members of Congress: I want you to know my feeling this afternoon when the Commissioner presented this array of home talent to you. It reminded me of a story about the country boy who went to visit his cousin in New York. He took his country cousin to an all-star production at one of the leading theatres, after the performance he asked him what he thought of it, and the country cousin asked if they all belonged to New York City. He said yes—they all belonged there, and the country boy replied "Well, they were pretty darn good for home talent."

The gentlemen who helped prepare this program for your entertainment and enlightenment during this Congress, who were here this morning, were old friends of mine, and were very considerate of you in putting me the last on the program. They were not satisfied with that, but gave Mr. Auel, the greatest master mind in the mechanical safe guarding I know of, not only in this state but any where, they gave him my subject, and he has already discussed it, and I think it was intended for me to get up and say amen to close the conference.

I have enjoyed very much what has been said on some of the subjects, and I have enjoyed the Congress from its inception. I have attended congresses in other states, and I do not want you to get the impression that the work of the safety movement is in any way near completion. I think we have just started; just commencing. Just beginning to get results. We have not accomplished what we should have accomplished because we did not start earlier. We have just that much more to do. The subject assigned to me, and I am going to try to keep to it pretty closely, is one that the average person will say there is no necessity to discuss, inasmuch as I know on the information I obtained from the men connected with the Department of Labor, I believe all the mechanical safe guarding is done. But once in a while we learn of men meeting with accidents, not on guarded machinery, but on unguarded machinery, and so there is yet great necessity for consideration. I am not going into details, but will deal with the principles involved in the mechanical safe guard.

Little John Dingy came into the house with his face all battered up. His mother said, "Now Johnny, you have been fighting again." But he assured her it was caused by an accident. His mother inquired as to how the accident had occurred, and after some little persuasion he admitted, "I had a fuss with Freddie Scanlon and he had his guards down." A great many of us have seen these things; accidents have occurred where the guards down.

I have no regard for a foreman or employer who would have a person at work on a machine with an exposed danger than a prize fighter who would rush his man in the ring with his hands tied back of him. He does not have much more chance, for sooner or later he will meet with an accident and the foreman or safety engineer who will permit of this, is absolutely unsafe to get in this capacity.

The absence of the mechanical safeguard was undoubtedly responsible for an enormous number of the fatal and non-fatal accidents that have occurred in the past. The horrifying spectacle and tragic deaths due to the accidents resulting from this cause, was the greatest factor in bringing forcibly to the attention of employers

and employes the necessity for the general introduction and application of the principles of accident prevention.

The early pioneers in the safety movement advocated, and were successful in having enacted, factory laws providing for the safeguarding of hazardous machinery, accompanied by the inspection system which was later supplemented by laws creating the State and Federal Departments of Labor to provide adequate protection for the life, health, safety and morals of all employes in industry. There also followed compensation legislation which provided financial relief to the victims of industrial accidents.

It is generally agreed that the first effective safety work engaged in was that of safeguarding the mechanical hazard, which proves beyond question that it was of primary importance. The results obtained showed immediately an enormous reduction, and in some instances the complete elimination of accidents on the most hazardous machinery. This stimulated intense interest, and safety devices were developed rapidly which provided adequate protection for the employe, and in some instances what was formerly regarded as extremely hazardous machinery has been equipped with safety devices that make it practically impossible for an accident to occur thus affording 100 per cent. protection.

Within the past several years employing concerns have engaged the services of our most efficient mechanical engineers to invent and devise appliances that will provide protection on the most difficult and intricate machinery. The safety devices thus developed at an enormous expense, have in a great many instances been advertised, and copies of plans and photographs given to other employing concerns gratis with the object of being of general assistance in the great humanitarian campaign for the elimination of accidents and the conservation of the life and limb of the industrial workers. I wish to commend the manufacturing concerns in this and other states who have contributed so generously to this splendid service, some of them in the Pittsburgh district are known throughout the country for their contribution in this direction.

MECHANICAL SAFEGUARDING THE BASIS OF THE SAFETY MOVEMENT.

The remarkable success achieved by the general introduction of the mechanical safeguard has formed the basis upon which has been organized our present national safety movement. The mechanical safeguard was the first instructive lesson and practical demonstration of the successful application of the principles of safety. The most indifferent and stubborn workman or employer after witnessing the splendid results obtained were obliged to admit that safeguarding was a pronounced success.

From my many years of experience as a worker in industry, investigator of accidents and inspector, I have reached the conclusion that at least 75 per cent. of the accidents that have been averted up to the present time can be attributed to the efficient use of the mechanical safeguard, and this has led the safety engineer into other safety activities where the mechanical safeguard is less a factor than education.

DESIGN AND CONSTRUCTION OF SAFEGUARDS.

The designer of safeguards aims to provide a safeguard that will positively prevent accidents, and at the same time not curtail the production of the operation or the machine. When the designer is confronted with a serious problem of safeguarding a new machine, it will be economical in both time and expenditure if he will inquire of other concerns having similar machinery as to how they have con-

structed their safeguards. The inspector of the Department of Labor should be capable of giving him substantial information. The National Safety Council and established companies, who are in the business of supplying and developing safeguards, will undoubtedly aid him in his problem, and by all means the foreman of the department where the machine is located, and the operator or workmen on the machine can frequently be of great assistance.

The science of safeguarding and the principles employed in construction are so well known that I will not occupy your time further, other than to say that occasionally we are confronted with a problem where, in order to provide an efficient safeguard, the production of the operator and the machine are to some extent restricted. In instances of this kind use the guard with limited production. The protection of the worker from physical injury is a thousand times more important than increased production. It is both a humane and economic advantage to pursue this course.

LEGISLATION ON SAFEGUARDING.

For many years I have been an advocate of legislation, both State and Federal, that would require the manufacturer of mechanical appliances used in our industries to provide efficient safeguards on all hazardous parts of their machinery or appliances of an approved type to meet with the requirements of the Department of Labor of the State in which their machinery or appliances are sold. I believe that this genius that has invented and designed the modern machinery for use in our industries could, with little effort, properly safeguard all hazardous parts. This would eliminate a great number of accidents.

So much progress is being made in the development of new machinery in our industries that our Department of Labor inspectors find new types of machinery in use in almost every visit they make to the different industries, and frequently new unguarded machinery in operation for months since their previous inspection. Our department has been very successful in getting many of our manufacturers of machinery and mechanical appliances to provide safeguards. There are so many, however, that do not take this safety precaution that it is necessary for State and Federal legislation on the subject. The law exacts this requirement from the elevator, bakeshop, factory, theatre, tenament house and public hall builders, all of which must have the approval of the Department of Labor and Industry before their use is permitted. Why not extend these provisions further?

CARELESS REMOVAL OF SAFEGUARDS.

It is a common occurrence to visit plants and find mechanical safeguards that have been in use to protect hazardous parts of machinery, removed and laid carelessly aside, while the machine is in operation and the hazard exposed. In most instances the guard is removed for the purpose of repairing machinery, and when repairs are completed the machine is hastily put in operation and the safeguards not replaced.

Occasionally we find that the operator of the machine removes the guard, claiming that it is unnecessary and sometimes that it interferes with the successful operation of the machine. On these careless practices I have very strong opinions which I do not hesitate to express.

The foreman or safety engineer who will permit the hazardous machine to operate without being properly safeguarded at all times, is absolutely unfit to serve in this capacity, and should be discharged without delay. I venture the prediction that in the near future should an accident occur under the circumstances referred to, the foreman will be prosecuted for criminal negligence. The company employing

him will be obliged to compensate the State for the public loss in productive man power, depending on the seriousness of the accident in addition to providing compensation for the unfortunate workman or his dependants.

The State inspector who inspects a plant and finds a hazardous machine in operation, without a safeguard, should require the foreman to provide a temporary safeguard immediately. In the event of his failure to do this, he should use the power of the law and stop the use of the machine or appliances until safeguards are provided. An inspector who would pass a machine with a removed guard is unfit for the service, and should be immediately removed. The manager or superintendent of a plan should issue strict orders to the foreman that no hazardous machinery shall be operated or appliance used unless all safeguards are properly in place, and where it is practical, mechanical safeguards should be provided that machinery cannot operate without.

CONCLUSION

While substantial progress has been made in mechanical safeguarding, there yet remains a great deal to be done. There are many mechanical guards that are 100 per cent. accident proof, but there are yet a large number that are only 25, 50 and 75 per cent. accident proof. The splendid work that has been done in this direction for the past several years should be continued until all hazardous machinery and appliances are equipped with mechanical safegurds that will be 100 per cent. accident proof. Let this be our goal for the future.

MR. WALKER: Through an error, the name of Mr. S. S. Riddle, chief of the Bureau of Rehabilitation of the Department of Labor and Industry, was omitted from the program. Mr. Riddle has agreed to discuss, this afternoon, the work of his bureau, on the subject of, "Rehabilitation of Persons Disabled by Industrial Accident in Pennsylvania." Mr. Riddle.

REHABILITATION OF PERSONS DISABLED BY INDUSTRIAL ACCIDENT IN PENNSYLVANIA.

BY S. S. RIDDLE, CHIEF, BUREAU OF REHABILITATION, PENNSYLVANIA DEPARTMENT OF LABOR AND INDUSTRY.

When a costly and intricate mechanical device, in splendid condition, is damaged by accident in an industrial plant to the extent that it can never again perform the function or service for which it was originally designed and used, the salvage squad comes in, the wreck is examined, and considerable ingenuity is exercised, and considerable ingenuity is exercised to adapt what is left of that wrecked machine to some other useful service in the mechanical operation of the plant.

When a worker is injured by accident in an industrial plant to the extent that he can never again perform the service he had been performing in the plant before receiving his injury, that worker immediately receives every medical and surgical attention to save his life and to salvage as much of him as is possible. That worker, further, get workmen's compensation as a protection against the economic pressure that would otherwise be upon him with a high percentage of his earning capacity destroyed. When he is able again to be about, and perhaps perform some service of a minor character at the plant in which he was injured, the plant, in almost all cases, gives him some sort of a job, in other words, takes care of him, and in many cases, probably, as a sort of moral obligation.

However, is the same degree of thought and ingenuity exercised in adapting that broken worker to useful service in the plant, for the benefit of the plant as well as the injured worker, as is used in getting the sound parts of a wrecked machine back into the daily operating mechanical equipment of a plant? Eliminating sentiment or humanitarian impulses, isn't the latter proposition s sound economically as the former?

In other words, is it a feasible proposition to survey the handicapped worker, discover if he has any latent abilities; and with the help of the plant owners and managers and the injured man's own fellow workmen, get him back into a job where his handicap will not subject him to undue injury or health hazard, or prevent him in any way from performing adequate service in a suitable job, obtaining a better wage than is the usual "gate-tending" cripple's job, and augment the production of the plant? Is it, therefore, possible to make such handicapped workers self-supporting, economically independent; and by their efforts, increase the production of Pennsylvania; relieve in a small degree, man-power shortage through proper placement; diminish labor turnover; and reduce unrest by eliminating the discontent that frequently comes to the disabled man, who, sometimes, in dangerous idleness, is dependent upon workmen's compensation alone?

The Commonwealth of Pennsylvania believes that the project is sound, from both humanitarian and economic standpoints. Governor Sproul, convinced of its soundness, not only approved, but sponsored the bill in the last legislature to create a new bureau in the Department of Labor and Industry to perform just such service. Commissioner Connelley, also believing absolutely in the soundness of the proposition, has devoted considerable thought to the organization and operation of the bureau which will handle the work. Chairman Mackey, of the Workmen's Compensation Board, assisted in the rehabilitation project. Dr. Patterson, Chief of the Division of Hygiene and Engineering of the Department, and Mr. Lightner,

of the employment bureau, have also given valuable assistance in Pennsylvania's preliminary rehabilitation work.

The Department of Labor and Industry, since November, 1917, has been active in the study and formulation of plans for rehabilitation of disabled workers. In January, 1918, several thousand employers in Pennsylvania, responding to a questionnaire, sent state-wide by this Department, offered approximately 50,000 jobs for disabled soldiers at occupations and tasks, which, in the judgment of the employers, could be performed by men handicapped by varied types of disability. All that data has been carefully preserved and will make valuable reference material for the new Bureau of Rehabilitation.

THE PENNSYLVANIA REHABILITATION ACT.

The Pennsylvania Rehabilitation Act, approved by the Governor, July 18, 1919, establishes a Bureau of Rehabilitation in the Department of Labor and Industry. This bureau is now operating. It is safe to say that its success or failure, measured by the benefits it will actually give to disabled workers in Pennsylvania, depends on the co-operation of employers—through such men as yourselves, interested and equipped with a knowledge of the methods and purposes of the Act—through employes, insurance carriers, and other agencies and organizations of both a public and private character.

Rehabilitation is defined in the Act as meaning the rendering of a physically handicapped person fit to engage in a remunerative occupation.

The Act further defines a "physically handicapped person" (or in other words, those who may be benefited by the provisions of the Act), as "any resident or residents of the Commonwealth of Pennsylvania, whose capacity to earn a living is in any way destroyed or impaired through industrial accident occurring in the Commonwealth."

However, a provision in Section 4 of the Act, stipulates that rehabilitation shall not be construed to apply to aged or helpless persons requiring permanent custodial care, or to blind or deaf persons under the care of any state or semi-state institution, or to any epileptic or feeble-minded person, or to any person who may not be susceptible to such rehabilitation.

The legislature appropriated, and Governor Sproul approved, in full amount, $100,000 to conduct the bureau until June 1, 1921. That appropriation is to cover administrative costs of the bureau, and from that appropriation, money may be expended in two ways, under the terms of the Act, to give direct aid to physically handicapped persons requiring rehabilitation.

One direct payment for the aid of physically handicapped persons may be made for the purchase of artificial limbs or other appliances for a physically handicapped person if it be shown that such person is unable to pay for such artificial limbs or appliances. The Act further empowers the bureau to procure and furnish, at cost, to physically handicapped persons, who have registered with the bureau, limbs and other orthopedic and prosthetic appliances to be paid for in easy installments when such appliances cannot be otherwise provided.

The second way in which direct payments may be made to aid physically handicapped persons is to provide maintenance costs during the prescribed period of training for a physically handicapped person registered with the bureau. Such costs may not exceed $15 per week, and the period, during which paid, may not exceed 20 weeks unless an extension of time is granted by the Commissioner.

The Act provides, in 13 clauses, under Section 5, the powers of the activity of the chief of the bureau with the approval of the Commissioner. The aim and purpose of all those clauses is to make possible contact with all handicapped persons eligible to the benefits of the Act in order that they may be guided into suitable work which they can perform in spite of their handicap.

One clause (c) provides for a survey to ascertain the number and condition of physically handicapped persons within the Commonwealth.

It will be recalled that the benefits of the Act apply to those persons injured in industrial accidents in the Commonwealth. At the present time and for some years past, the Department of Labor and Industry has been receiving every day complete reports of all persons injured in industrial accidents within the Commonwealth. Following the receipt of those reports, workmen's compensation agreements come to the Department for all dismemberment cases where the disability exceeds 14 days, or 10 days, under the amended workmen's compensation act, after December 31, 1919. Even after the compensation agreement is received, a supplemental workmen's compensation agreement is received at the Department when the degree of disability in a compensation case changes.

It is, therefore, obvious that it will be unnecessary for the Bureau of Rehabilitation to expend large sums from its appropriation in surveying the State to obtain data regarding persons eligible to the benefits of the Act. More complete information than could be obtained by survey parties on such cases is coming daily at the present time, and has been coming during the past years, to the Department of Labor and Industry.

Consequently, all of the data is at hand, and all that remains is to establish definite and effective working relations with the Workmen's Compensation Bureau to have transmitted daily to the Bureau of Rehabilitation all information on possible rehabilitation cases. This information will be obtained on forms which have just been completed and the information for which will be obtained from original accident reports and from original agreements and from supplemental compensation agreements. Even though three forms are thus received on the same case, there will be no confusion as each report will bear the name and workmen's compensation case number of the accident victim.

Investigation of all serious accident cases reported to the Department of Labor and Industry in past years will be made from the files of the Department of the Bureau of Rehabilitation in order that handicapped persons injured in the past may be located that they may obtain the benefits of the Act.

An opinion from the Attorney General has been received at the Department of Labor and Industry to the effect that the benefits of the Rehabilitation Act apply with equal force to persons injured before the Act became a law as to those persons receiving injuries since its enactment. Another opinion has defined the intent of the Act as applying to workers injured in agricultural accident.

The possibility of the co-operative procedure between the Bureau of Rehabilitation and the Bureau of the Workmen's Compensation was realized before the Act became a law, and for that reason the legislature placed the Bureau of Rehabilitation in the Department of Labor and Industry.

Other powers of the Bureau of Rehabilitation, with the approval of the Commissioner, are:

To establish relations with all public and private hospitals to request prompt and complete reports of industrial accident victims under treatment in such hospitals in order to avoid lost cases and acquaint all eligible accident victims with the provisions of the Act.

To receive applications of any physically handicapped persons, as defined in the Act, for advice and assistance, regarding their rehabilitation, to cover such cases as might, by any chance, not be discovered by other means.

To arrange for such therapeutic treatment as may be necessary for the rehabilitation of physically handicapped persons registered with the bureau. The Attorney General has stated in an opinion that the costs of such therapeutic treatment cannot be paid directly from the appropriation to the Rehabilitation Bureau,

but in such cases therapeutic treatment can doubtless be arranged for in State supported or State aided hospitals, when the accident victim is unable to pay for the treatment.

To arrange with the Superintendent of Public Instruction for training courses in the public schools of the Commonwealth in selected occupations for physically handicapped persons registered with the chief of the bureau, and to make such arrangements with any educational institution for such training courses, or with any public or private institution, or commercial, industrial, or agricultural establishment for such training courses.

To arrange for social service for the visiting of physically handicapped persons and the visting of the families of such persons at their homes and after convalescence to give advice regarding any matter that may effect rehabilitation. This social service work would, of course, have to be arranged by co-operation in the local communities.

To conduct investigations and surveys of industries to ascertain occupations within each industry in which physically handicapped persons can enter upon remunerative employment under favorable conditions and work with normal effectiveness, and to determine what practicable changes and adjustments in industrial operations and processes may facilitate such employment. It is in this work that heads of safety departments and employment managers in the various plants of the Commonwealth may be of great co-operative aid to the Bureau of Rehabilitation. Such co-operation, combined with the mass of data already obtained by the Department of Labor and Industry during the last two years, and by other agencies and organizations engaged in fitting disabled workers into industrial tasks, will be of greatest benefit and will make unnecessary at once, wholesale surveys of the bureau throughout the State a great drain upon its appropriation.

To make such studies and reports as may be helpful for the operation of this Act. Such studies and reports may be made of individual cases or of varied classifications of cases, or the total number of cases, after the bureau has been in operation for a definite period.

To co-operate with any department of the Federal Government or of the Government of this Commonwealth, or with any private agency in the operation of the Act.

BUREAU PROCEDURE.

Printed forms of one page, letter size, on which any applicant may request information regarding the benefits of the Pennsylvania Rehabilitation Act are printed. Number of these forms have been placed in branch offices of the Department of Labor and Industry throughout the State. Upon receipt of one of these forms, filled in by an applicant, the Bureau of Rehabilitation sends the applicant a numbered application blank with questions which will disclose whether he is eligible to the benefits of the Act, what his educational history is, and his educational status, and also his industrial history, together with a report of his physical condition, what class of work he desires to perform in the future and why he desires it.

Such numbered application forms are sent to every possible rehabilitation case reported from the accident reports and workmen's compensation agreements from the Bureau of Workmen's Compensation to the Bureau of Rehabilitation. A definite record is thus kept at the Bureau of Rehabilitation of every accident victim in the State to whom the benefits of the Rehabilitation Act were made known. A copy of the Rehabilitation Act, with an explanatory letter, accompanies every numbered application blank. In the event that the application blank is not returned within two weeks, a follow-up form letter is sent to the accident victim who has not replied; and two weeks after that, a second follow-up letter is sent in the event that no reply has been received at the bureau.

Contact is being established by the Bureau of Rehabilitation with every applicant sending in a numbered form, and every effort made to make it possible for him or her to enter remunerative employment at a task which their qualifications indicate they can perform.

All such application blanks are marked in the bureau as to the workmen's compensation case number of the applicant, and industrial code number given to designate the kind of employment, and the age, sex, race of the victim designated by proper classification in the Bureau of Rehabilitation.

From the information received on such forms, it is believed that valuable statistical records may be built up and a balance sheet struck at any time to show, for the cases under observation, under what age groups they fall, what varieties of educational status, from what branch of industry they came, the character of their disability, and the type of occupation they are endeavoring to enter.

The task of rehabilitation of Pennsylvania industrial victims is great. The success of the task depends upon the measures of co-operation which employers, employees, and local organizations of various kinds accord to it.

It is needless to recount accident statistics and the educational limitations of a high percentage of men injured in the industries. Of all these conditions you are aware, and you can realize that the school training work, while applicable to many of the industrial accident victims will, in a certain percentage of cases, not be feasible, and in some cases, specialized placement and training for a specific task in industry will be more logical.

One great measure of co-operation that can come from the bureau will be to pay the maintenance costs of a man learning an industrial process in a plant, and also to give more time to the investigation of a man who has been injured, to determine the more advantageous possibilities of his placement than can, in most cases, be given today by the industries themselves.

The Bureau of Rehabilitation has offered its services directly to 397 industrial accident victims in 51 of the 67 counties of the State. Of that number, 240 have definitely registered with the bureau, including 233 males and 7 females. Of the 240 registrations, 41 are under 21 years of age; 68 between 21 and 30; 50 between 31 and 40; 41 between 41 and 50, and 40 are over 50 years of age. The majority of accident victims who come to the attention of the bureau are over 31 years of age. One hundred and forty-seven of the accident victims, registered with the bureau, were native born Pennsylvanians, 22 were born in the United States outside of Pennsylvania, and 71 were born in foreign countries. Twenty-two of the total number of handicapped persons, registered with the bureau, cannot read or write English.

One hundred and twenty-two of the total number of cases sustained their disabilities before the Act was passed and 118 have been injured since the passage of the Act. The total number of parts disabled among the persons registered with the bureau are: 79 legs, 74 hands, 40 arms, and 24 feet. Eighteen of the registrants are totally blind, two have lost one eye, and 13 registrants are handicapped by other physical disability.

Sixty-one persons have been definitely assisted by the bureau and placed in school, in shop training, or in proper employment. In numbers of cases, the employers in whose plants the persons were injured have co-operated with the Bureau of Rehabilitation, even to the extent of purchasing artificial appliances and placing the accident victim in suitable remunerative employment in their establishments.

Twelve of the 61 persons were placed in schools, three were placed in shop training, 44 were placed in suitable employment, 35 were provided with artificial ap-

pliances, and six are receiving maintenance payments from the Bureau of Rehabilitation during their school training.

Of the 61 cases definitely assisted by the Bureau of Rehabilitation, 58 are men and three are women; nine are under 21 years of age; 18 between 21 and 30; 15 between 31 and 40; 13 between 41 and 50, and six over 50 years of age. Thirty-nine were born in Pennsylvania; five in the United States, outside of Pennsylvania, and 16 in foreign countries. Thirty-two were injured before the Act became effective.

The parts lost by persons aided by the bureau include 23 hands, 14 arms, six feet, and 19 legs. There are also two cases of total blindness and two handicapped by other disabilities. Thirty-seven of those aided were single and 23 married. The 61 injured persons assisted by the bureau had 59 dependents.

ACTION TAKEN ON SOME CASES.

Five of the registered cases placed in public schools include four boys varying from 15 to 17 years of age; each of whom has lost a hand or arm. A sturdy Pole, 34 years of age, who lost an arm, attended evening Americanization classes in public school to learn English. He has been provided with an artificial arm, will bring his wife from Poland; and arrangements have been made to place him and his wife as tenant farmers on a large farm. A man, 24 years of age, who lost a leg, is learning telegraphy. Four of the young men and one young woman have been entered in business schools. One of the young men lost a leg, the other three lost hands, as did the young woman. One of these young men completes his twenty weeks' maintenance and graduates from business college June 11.

In some instances, disabled workers have been placed in suitable employment at higher wages than before they were injured. A laborer, earning $4.00 a day, lost an arm. Through the efforts of the bureau, he is today operating a machine in a glass factory, earning more wages than before he was injured. A young man with a knowledge of English, Polish, and related languages, lost a foot at work, and is today in the employment service of his employer, dealing directly with Polish and Slavish applicants for work. One young man, 16 years of age, lost a leg and is today learning winding of electric generators. He will later take up electric study in school or by correspondence. Another young man, who lost a leg, will enter an automobile garage and take a correspondence course in automobile engineering. A man, 57 years of age, had once been a blacksmith, lost a hand, and aided by the bureau to obtain an artificial hand, is today doing blacksmithing work.

The Bureau of Rehabilitation, however, encounters many difficulties in its work. Many of the disabled accident victims are married men with families for whom suitable employment must be found in their localities. The bureau must, in all cases, get in direct touch with the accident victims in their homes, which involves travelling to all sections of the State, and to many isolated localities where frequently there is but one industry, with the opportunities for shop training limited. In many cases, the age of the victim, his family responsibilities, and often lack of elementary education preclude the possibilities for school work.

All residents of Pennsylvania whose capacity to earn a living has been destroyed or impaired through an industrial accident occurring in Pennsylvania are urged to write at once to the Bureau of Rehabilitation, 18 South Third Street, Harrisburg, Pa., as the service of the bureau is without any cost to the injured persons who come under the Act. Co-operation of employers and employees throughout the State is essential, and wherever it is believed that a disabled employe could be employed in suitable work, the Bureau of Rehabilitation asks that it be so advised.

COMMISSIONER CONNELLEY: I notice there are a great many men here, and I want to call your attention to the fact that we are going to have a round-table with referees, and an open forum question box and would like to have everybody attend. We are going to have this meeting on Thursday evening, at eight o'clock, in the Caucus Room, House of Representatives. As many as possible try to be present.

MR. WALKER: I am to make this announcement that on the second floor of the Penn-Harris Hotel we have an exhibition and it is the wish of the Commissioner and myself that all of the members attend and become familiar with the safety devices and so forth. Those of you who have not already done so, will you kindly attend the exhibit before leaving Harrisburg. It has been suggested that we dispense with the discussion on the papers on the subjects presented. However, if any of the members of the Congress desire to interrupt any of the speakers or have a private discussion, I am sure they will be glad to answer such questions. Or, if any of the members desire to enter a brief discussion, we will, I suppose, have to give in and entertain that thought.

The thought is that everybody wants to get out of this building and into the sunshine. I want to say that the Commissioner and myself are very much gratified by the interest shown by each individual member of the Bureau of Inspection and of all other bureaus, during the interesting sessions of this week. I know that I have had comment from, I won't say how many, but it is a major portion of my bureau, who express themselves as well with the statement that this has been one of the most successful and interesting Congresses yet staged by the Bureau of Inspection, and I wish you and Commissioner Connelley to know this thought of the inspection bureau.

We have planned to have the members of the inspection bureau meet in the Caucus Room of the House at five o'clock. If you will do that, when we adjourn that will obviate the necessity of our going downstairs. After that I would like to have the inspection bureau go down in a body to the exhibit and carry out the wishes of those who are exhibiting their devices and would like to demonstrate them to you. The meeting now stands adjourned.

WEDNESDAY, MARCH 24.

EVENING SESSION.

CHAIRMAN: JOHN VOLL, PRESIDENT, GLASS BLOWERS' UNION, PHILADELPHIA, PA.

COMMISSIONER CONNELLEY: We have, tonight, ladies and gentlemen, somewhat of a disappointment in the fact that Mr. Gompers writes this letter to me:

AMERICAN FEDERATION OF LABOR,

Washington, D. C., March 23, 1920.

Mr. Clifford B. Connelley, Commissioner, Department of Labor and Industry, Harrisburg, Pa.:

Dear Sir: It is with deep regret that I have to inform you that I cannot be with you tomorrow evening at the Pennsylvania Safety Congress. I have just been informed over long distance telephone that my brother, Louis Gompers, passed away and it will be necessary for me to leave for New York to pay last tribute of affection and respect to his memory.

Mr. Matthew Woll, vice-president of the American Federation of Labor, has consented to be with you in my stead. I wish for your Congress the greatest success so that the movement may go forward to save the life, limb, and protect the health of the workers of the State of Pennsylvania.

Again expressing my regret at my inability to be with you, and with best wishes, I am,

Very truly yours,
(Signed) Samuel Gompers,
President, American Federation of Labor.

COMMISSIONER CONNELLEY: We had a great deal of difficulty in securing Mr. Gompers on the program. He at first said he was willing, indeed, to appear before us, but he said, "My work is such that I fear I cannot promise so far ahead and am afraid to say that I can render the services that you desire."

I told him that Mr. Roosevelt would be on the program with him and I said the Colonel signified his willingness to be here. Later Mr. Roosevelt, when here in Harrisburg, said that it would be impossible for him to come, and we took his name off the preliminary program with regret. We also had Mr. Gompers on the program to speak to you on the subject of, "How Organized Labor Can Best Help the Safety Movement." But aside from that we have Mr. John Voll, President of the Glass Blowers' Union, Philadelphia, Pennsylvania, who is going to be our chairman.

There has been some misunderstanding with the members attending the Congress as to the difference between our preliminary and final program. I make no apologies, my dear friends, for the Congress and its purpose and for those who have been taking part. I think we have been most pleased by the array of talent we have had and if you will just glance over the program you will see that there are sixty-three speakers. Mr. Gompers and Mr. Schwab are two, of course, who wished they could have been here, but certain circumstances over which they had no control, prevented it. I am sure that the substitute Mr. Gompers has sent will render to you the service that we know he will.

President Hammerschlag, of the Carnegie Institute of Technology, came here on a visit to see Mr. Schwab, and we pressed him into the service like we do with many other soldiers. So, tonight, I feel that while we wish Mr. Gompers were here, that we will be greatly edified indeed by Mr. Matthew Woll, first vice-president of the United States Federation of Labor.

Ohio gives to these United States of ours some people other than Presidents. When I was a boy I was led to believe that a man must come from New York, Indiana, or Ohio to be President of the United States. In the school which I attended then, we had very little civics. But a little later in life I understood it was only a joke, but during the time of my school life I took this very seriously and we had a school teacher who was absolutely serious herself, but I have found out that Ohio gives to the country other than Presidents.

Our chairman was from Ohio originally, and he is President of the Glass Blowers' Union of the United States. In representing the American Federation of Labor he was appointed by G. Coxe, of Ohio, as the one person to represent labor in the State of Ohio. When Governor Sproul, of Pennsylvania, was ill and we wanted a man to form the committee to represent labor on the revision of the Constitution of Pennsylvania we got Mr. John Voll. He has been with us some time and has rendered yeoman service, and it is my privilege and pleasure to present to you Mr. John Voll, a member of the American Federation of Labor and a member of the commission appointed by Governor Sproul for the adjustment of the Constitution of Pennsylvania and a regular citizen, Mr. John A. Voll.

MR. VOLL: Ladies and Gentlemen: I am somewhat embarrassed at the introduction my friend gave me as to our qualifications and our capabilities, but speaking about a President from Ohio, it looks like there might be some chance for a President from Pennsylvania, while Ohio is still in the arrears.

This Industrial Safety Congress covers a very, very wide scope and the manner in which safety in industry is provided through law and its administration, all the undertakings that are reached between capital and labor in industry is of vital importance to our Government and throughout the world today.

The State of Pennsylvania is indeed to be commended from its Government and members here for having made provision for holding this Congress. Particularly so at this time, because never in the history of the world has there been greater necessity of holding an industrial congress than there is just now, through which capital and labor and all those who are interested can get together and give forth their views, expressions of their views of what is necessary to make industry safe.

Safety in industry, as I understand it, means safety from misery and death through the safeguarding of machinery in hazardous places of employment; safety from sickness through proper sanitation, by proper ventilation, and reasonable hours of employment; safety from unemployment. In times of stagnation, through a division of work and shorter hours, safety for machinery and other things through education and co-operation, safety for production and a maximum production through fair dealing and mental understanding between employer and employee. The real safety in industry arises through establishing fairly the profits in industry, and the establishment and practice of democracy therein.

These things are looming up largely not as possibilities, but as inevitable in our country, and all forward looking countries. The movement has already started through which all these things will be obtained, and more, and the form in which it has started will not permit of a great deal of trifling. For look where we please—China, Japan, India and to the newspapers carrying the dispatches that there has been 83 strikes in India in a short time, and that a riot is going on there now—or that Europe, North America, Central America, South America,

everywhere, the same general unrest is prevalent. It comes because of the great war which we have passed through.

We face a crisis—all other countries face it at this time. There is a new thought in the world, a demand for more liberty. The school house is surely and correctly doing its work. The reactions in politics and industry must go; nothing on earth can stop it. We see the trend and sentiment wherever we look. We see it some times in action, which is to be deplored, and it seems to me that is absolutely necessary if we, as American citizens today, are to grasp the sentiment of the times, and to protect our Government in the manner that it should be protected.

That is fair to all. Our belief is that we have the best Government in the world and when we peruse history from the Roman Empire down, we know we have the best in the world, and it may yet be proved, and the majority has proved that the people can govern themselves better in this way than in any other form.

It was not my intention to make a speech here this evening. I came to preside, and I am sure the gentlemen I came to introduce to you will entertain you with some matter pertinent with the times, that we have come here to discuss this evening. I take great pleasure in presenting to you Mr. Matthew Woll, President of the International Photo Engravers' Union. Mr. Woll.

ADDRESS.

BY MATTHEW WOLL, PRESIDENT, INTERNATIONAL PHOTO ENGRAVERS' UNION.

Mr. Chairman, Ladies and Gentlemen: My first mission is to speak of the laws against the brutal treatment of animals, providing certain methods only by which animals may be killed. They establish as a whole, and the Government itself exercises such care, extreme care if you please, for the animal kingdom. How much more important, then, that our moral and legal code should provide care for human beings, to prevent suffering and injury.

Again, let us refer back to the days of the black man's slavery, when one human man owned a property right in the man of a different color. We fought a great war that the unfair treatment, the unjust treatment should not occur to the slave man; and, then again, the slave master, the owner of the slave, realizing that the black man was his property to feed, to labor; he took extremely good care that that black man was not being unduly injured; that sickness or disease should not overtake him, because that meant jeopardy to his private property. The greatest care was taken that the black man might be freed, and a contract relation exists now between the black man and the white man.

All of that human consideration disappeared. It is indeed a black mark in the history of human life. With that freedom follows a disregard for human life and human happiness and the only incentive seems commercial wealth and to increase one's private possessions.

Organized labor realizes that the great human element that is in industry and all its activities has been founded upon the desire and aspiration to again bring into the human relations once manifested in industrial life and industry—that same human element that predominated in all their lives. May I take you back a few moments to a sad, but never regretful time of history, when our country joined the allied nations in suppressing and destroying the rule of autocracy and made the way clear for the safety of democracy and the ideals of democratic institutions?

In that contest, when the politics and when the conception of democratic institutions were placed in jeopardy, the use of America in factory, mine, shop and mill gave the law in use that our ideals might triumph. When we reflect on these times we learn what an appalling line of deaths we had to pay for, and we would have gladly paid more if necessary. Yet, during that period, when life was being wiped out over new Government, there was exercised the highest care, extreme attention that was given in order that life might be protected to the highest degree possible even in that contest of slavery.

The Nation prepared as it rightly should, to give proper consideration and attention to those who had been injured in that contest, so that they might again at the end of the contest take up the activities in our business lines; in industry or whatever avocation it might be, and we provided funds for the injured soldier, and care was given him until he was able to take care of himself, which was a splendid idea, and a great human accomplishment. It is, however, only a just due to those injured in that great contest.

While we have been appalled at the great number of deaths and disease and the cruelties of the war, yet on the other hand, are we not overlooking the fact that in our industrial life day after day and year after year the same human toll is made

in industry in order that our Nation may triumph over all other nations from an industrial standpoint—industrial supremacy—and yet we still pay little attention to the great problem of accident prevention.

Statistics prove that the fatalities and deaths in industry are even greater in number than we experienced through these tragic days of the war. The human mind is a strange thing. Occasionally we hear of a great land catastrophe. It may be a great fire, somewhere, where 25 or 30 or 100 lives are swept out, and great human anguish is felt all over the Nation. Yet we sit quietly by, because that same thing takes place in industry every day, except that it does not carry with it all those national tragic elements, and yet we of the work shops, mines and mills know and experience what is going on. Can you not then see what you are doing here means to labor?

May I just explain to you how labor has viewed this question, and what it has done up to the present moment to bring out some degree of relief into the question of giving up human life in order that industries might grow and expand.

Our old conception in industrial relations, that which is expressed in these old legal terms, master and servant, originally assumed that it was solely the duty for the employer to supply the shop or the mill or the tools by which labor was to give service and having rendered that service, it then became a duty and responsibility of the workman who put those tools into operation, who used the motive power to produce useful articles and to place the entire activities and productivity on the shoulders of the workman.

And when an injury occurs in industry, and, perhaps a father is killed, the poor understanding children, the mother who had to bear the family burdens, find poor consolation in hearing that the law assumed that all necessary risks were his and not up to the employer. So, if negligence was involved and the employee contributed to that negligence, again the employer was exempt, financially or otherwise. So, in the event of the employer employing a fellow servant who is inexperienced, ignorant and uninformed, and injury came because of that, the fellow servant proves a suitable method by which to shift the responsibility. When he entered employment he also entered an agreement that the employer might be absolved and the employee had to assume all responsibility and hazards.

When we reflect, we are impressed by the barbarity of such a thing in the nation. And, yet, if you realize that it has only been within recent years that we considered these things from this viewpoint, and most concerns thought that hazards in industry should not be placed on the employer, but upon the industry itself, and it has only been within the last few years that the compensation law existed.

Who was it that first concerned themselves in the United States about this, and who was it that suffered under that barbaric relation? The labor movement—that much misunderstood, misinterpreted, abused and ill-treated union organization. Through their activities they were able to arouse public confidence that the risk in industry, where society has benefited, should not rest upon the workman, nor upon his family and children, but should be rightly borne by industry itself.

Then too, there was this fact about compensation legislation; that by assuming all responsibility and damage from the association on the part of the employee and shifting it from the employer that it would prove an incentive for them, if for no other reason, but human desire, at least be a self control to income to apply the most modern safety devices possible to reduce that risk.

It is true that the compensation laws have developed a great deal in industry in order that the risks involved and paid for under the compensation laws may be reduced to the lowest minimum possible, and yet it is a sad tragedy of our industrial history that that has not proved the all powerful motive toward the installation of safety appliances and safety devices.

Unfortunately, we find now that the responsibility is shifted on the public and the compensation laws have not altogether forced the employer to give greater consideration in the reduction of industrial accidents, and industrial calamatics taking place. And, so, there is a need for a new expression of governmental advise, and that is not alone to deal with taliated methods, but the compensation that workmen receive for services when the pilfering has been removed from industrial activities.

It is not my purpose to burden you with this talk, but I say they have failed in doing all that was hoped for and there is time right now for additional expression in order that we may get at the root of the evil. If the State, as you have done here and as is being done in all States, make up complications in industry to apply all safety devices of which the human mind or imagination of the present day is capable of devising, of course, it may be an extra expense for the employer to buy safety devices and safeguards for his machinery, but after all it is a saving. It is only the original cost. It reduces compensation from the compensation laws and, moreover, it saves human lives and prolongs human life, which after all is a great saving.

Organized labor has never been opposed to machinery of any kind. That which means labor saving as well as labor safety. At one of the very earliest periods of its existence it declared itself in favor of all mechanical improvements which would reduce the quantity of labor, and that has been its position and its attitude ever since, and at no time has the organized labor movement opposed any advance or progress by any means.

However, we realize that with the development of modern steam power and its application, of electricity, of compressed air, the introduction of poisons and explosives and their device because the hazards and risks have increased in the same proportion, and, so, there is today a great need, more so than ever before, for care, the utmest care, in regulating the industries and in the safe-guarding of its dangerous machines applied near these powers—regulation of the use of any machine in which these cases enter.

Organized labor started and has stood to arouse the importance of this question. some years ago we started a movement such as you have urged. It has urged safety museums also—and in Washington particularly—in order that there might be adoption of all safety devices of which the human mind could conceive in order that all industrial manufacturers could see them.

And, so, organized labor viewed sickness and disease and its alarming effect long ago, to which society has paid little attention. Injury, sickness or disease, through vocation, should equally be made a burden upon the industry rather than permit the employee to suffer under that rule. We still suffer under the barbarous rule because of sickness and disease contracted, not because of ordinary causes or because of his failure to keep the work shop in a sanitary condition, to give proper care for the prevention of nurses breaking down, and physical exhaustion. And, so, I feel that they should be made again to put the burden upon industry. Impress the employees with the need of that and secondly to preserve life and health.

The organized labor movement, in addition to calling attention to this situation, you are going to find in industry there is necessary considerable human sacrifice in order that you and I and others might have those good things in life which we enjoy. It has also, through its methods, stood and has established conditions which make them conserve health and life, and the protection of limb. Through its establishment, by reducing the long working days to eight hours a day, it has protected life and limb. Indeed, it has prolonged life and increased value.

I regret that I am unable to give you accurate data of our organization records, but may I only allude to them where shorter days have meant something in the life of men. In the cigar industry, 30 to 32 years of age was prolonged to the age of 50 years per workman. If the Cigar Makers International Union from its establishment of eight hours a day has prolonged the life of its members fifteen years, it has indeed accomplished a wonderful human result, and has added to the value of human life and industry. And, so, the Typographical Union, the reduction of working hours improved conditions immensely in the prolonging of human life, and this is not only a human undertaking, but likewise it is of great economical value to each producer, and industry as a whole.

It is most remarkable that fatigue in industry are largely in proportion to the organization. They exist between the wage earners where they are its organization. Where organizations from fatigue are less, and to the degrees that prevail, it would find proportionate injuries, accidents and death. I have here a small statement relating to the mining industry, as collaborated from reports available in 1917, which the records of their trade union fully bear out.

The only reliable figures at hand which could furnish a table of comparative risk for the workers in the industries between States are those provided by the Federal Bureau of Mines. Necessarily these give only the numbers and percentages of fatal accidents in and around the mines, quarries, etc. The figures available at the present time are for the year 1917. The 1918 totals have not been computed in the form of percentages for numbers of men employed or compared with tonnage output to fatalities. However, the bare figures showing numbers of fatal accidents in the mines of the various States in 1918, which are available, indicate that there is no great discrepancy in percentages between the years 1917 and 1918.

Missouri, a State where the mines are 100 per cent. members of organization of their craft shows the latest percentage of fatalities per 1,000 employed—1.14. Michigan, also organized to a man follows with 1.66 per 1,000.

In Colorado, where John D. Rockerfeller, Jr., has inaugurated his "just as good or better" form of company, controlled collective bargaining without the power for self assertion that a union of the men themselves assures, the fatal accidents in 1917 reached the alarming figure of 13.21 per 1,000 employed.

The figures for Pennsylvania show a fatalities percentage far higher than those in the fully organized States; 2.85 proportions to the power of the men, through their organizations to demand working conditions, that will make towards comparative safety.

What is true of the mines is true in nearly all capacities, and almost every industry, and hence we are so urgent for the organization of records. For years the laws and the State experienced the highest expressions on safe-guarding the health, the life and the limb of human beings, and yet the application of law depends to a very, very much larger degree upon two factors in industry principally—one, the workers themselves, and, second, the management of industry.

When we speak of the management of industry up to the present moment has not been inspired so much by human dictation as it has by depression of capital. The way generally given to management is, "get results and pay as little as possible." Results have been had, but the workers have paid the bill. The time is here when a correction must be done, and we must consider humanity first, and income and profit must come after. Management must be impressed with need of giving consideration to the human element in industry, or the materialistic result of industrial production.

We are glad to know there is another factor developing. It has had a struggle, of course, but it has a factor in changing the attitude of those in possession of wealth, and who know and contract the bills to production. While we contend

and feel the employer is not shown the proper consideration to the human element in industry, and there has been a great change, and we realize it, I do not want to absolve all of the employers from blame.

It is true accidents do not occur because of lack of prevention by safety devices. Of course, the employer has done doing what he might have done; ignorance on the part of the employee. We appreciate the need of education of the employer and we must do all we can in the education of the worker in order that he may save his own life and limbs and not be a menace to his fellow worker.

Unfortunately, however, in the education of that organization, as with the employee, much is destroyed because when the employer seeks to eulogize in the extreme, and to install in the minds of the wage earners that he must work by himself, and for himself and not associate with the fellow worker, and that his interest is distinct and apart from the man beside him, he also instills the hostile need, caring whether that man is injured or not. Trade Union seeks to make them feel that he is responsible not only for his own well being, but also for the best interest and welfare of his fellow workers. That he should likewise give care and attention to see that his fellow-worker is interested; not that he himself should have a shorter work, but he should exercise care and thought in the manipulation of the dangerous machines and motive powers and gases, and it will be a safeguard to the worker and help to reduce human toll.

An organization labor man seeks to instill a collective obligation and spirit and understanding of life and joint endeavor, and the employer in this enlightened day who seeks to deny that development is unfair and unjust to his own property, to industrial relationship, to the best relations of society and human requirements and ideals.

That is the work of organized labor, and when we ask a higher compensation, having alluded to the condition of ours, how it affects life, the matter of wages has a great importance on the conditions to human workmen, because if you stullify the brain, you endanger a person physically and mentally. We are only weak humans, and if you make him an easy prey, you endanger him.

The experiences during the war, particularly in England greatly eliminated fatigue, using the great factor that they were under-nourished. Those elements have never been so thoroughly analyzed—so well understood as now, and are we to learn by the lessons of the past, are we to give consideration, activity and help as is shown us is necessary for the future welfare of the people to establishment of industry, in order that they might produce the highest type of womanhood, and manhood? And, so, the work is indeed great.

It is a work in which organized labor will take a second place to none. It is a work which it realizes touches on every fundamental of society. It is the greatest appeal known. May I say it is a work in which every woman is perhaps more deeply interested than men? Because after all the safety of human life, indeed for the production of human life is felt more by mothers than any other factor in society, and if we are going to be true to American Motherhood and American homes, there is not a thing we can leave undone to give full and adequate protection to it. The State, in its development of the Department to show the Government these laws, has sometimes been rather stingy.

Often times splendid laws for the protection of life and limb have been planned, and yet when it comes to the question of apprehension and securing proper talent, adequate talent for the instrument and application to those laws, we found ourselves sadly lacking. I am not familiar with the state of affairs in Pennsylvania with reference to the means provided to undertake this great and human task, and yet I know of no other department which touches the home so closely and so keenly as that department. If you ask me how can organized labor best help

the safety movement, I answer you by encouraging the formation of a collective understanding, a collective agreement, an organization of employees first of all. Second, to give the highest contribution to the Government institution to issue the instrument of your law by legislative assembly, and that is how organized labor will be able to remain hand in hand in the safe-guarding of life, the safe-guarding of limb, of humanity, and the safe-guarding relation has been well expressed by the chairman of your meeting.

Oh! it is really a regrettable blow upon our present civilization that we have so great a human tool in our industries of life. Every industry carries with it needless hazard and risk. Not a single industry exists where millions of men could not obtain employment where life could be made secure and where health could be promoted. That being true, should we longer wait, should we longer tolerate that condition of affairs?

The labor movement, in undertaking its work, measures up practically every problem; analyzes practically every situation that comes to its attention from the business of human life. Does it protect? Does it promote human life and welfare? If it safe-guards health, brings greater happiness to home and mankind, then you will find organized labor is doing all of that. If on the contrary it promotes wealth to the disadvantages of human life, human labor, human happiness, then it answers human consideration.

The organized labor measures every proposal from the standpoint of human life. In that work it has progressed and has achieved remarkable results. In that work you may rest assured it will work with any other movement for human life and health. The American labor movement seeks to bring education to the mind of the uneducated. It seeks to stimulate the wage earner to improve his knowledge. It seeks to install edueation and destroy egotism in order that safety might come to all of us—also greed and selfishness which prevails only too greatly in our industrial relations.

What we need to get along in this life is less selfishness and a greater desire to see the other man progress, that is genuine altruism. A common understanding of human brotherhood and most of all to reduce that long and painful position of the injured, and then coming out of the pell mell of industry metling into the glorious path, dropping here and there on the wayside—its unfortunate path. She passes so long through misery and suffering to reduce it to the minimum degree and bring him to the permanent position where there may be greater hope and comfort and for sacrifices made by society and industry, and in that work we compliment you as men and women.

It is indeed a great thing for this Congress to have met, dealing with this great human problem, one to which there has been too little public attention. Let your meetings be to classify the difficulty, an example for all the other States, and let the message of this great Congress go forth that hereafter human life might be the purpose of industry. Private profit must be eliminated altogether.

Abraham Lincoln said rightly that it is the duty of every man to protect himself and those associated with him from accidents and injury and death. The American Labor Union not only expresses to you its desire to co-operate and help, but it takes a second place to no organization in safe-guarding human life, bringing the need of home happiness and comfort, making for it better manhood and womanhood and better understanding of brotherhood and manhood and womanhood as a whole. But while we are not taking a second place, we will gladly co-operate with every man and woman inspired by the same motive lying under the same ban of humanity.

I can only express deep regret at the absence of Mr. Gompers, that he might more fully express our feeling on the subject. But I feel that the work at hand is one in which Christ, Himself, would first effect were He to come to civilization again. For, after all, it was the human life, the child, and this appeal is for the protection, first, of the child to give him a proper childhood, to give him the proper education, and opportunity; and secondly it was for the up-building of the home and the safe-guarding of human life. I thank you.

A REACTION ON ACCIDENT PREVENTION.

BY SAMUEL GOMPERS, PRESIDENT, AMERICAN FEDERATION OF LABOR.

(READ BY MATTHEW WOLL)

Practically every mechanical operation and every machine can be made safe. It is possible to remove the risk of injury to life and limb from almost the entire field of industry. It should be made obligatory for industry to apply the devices that are available.

Statistics do not reveal the whole story of anguish and suffering that is due to preventable injuries. The figures are not complete. If they were complete they could not reflect in full the price that is paid through that which we call accident for neglect of preventive measures and devices. The burden of accident risk should be removed, as it can be removed, from the life and work of the toilers.

The workers have a special interest in safety, because it is the workers who lose the arms and legs and the lives in the accidents of industry. Every advance toward safety in industry increases the chances of the workers to go through life unscarred, with their bodies intact and with their earning powers unaffected by mutilation.

Organized labor extends greetings to all who are engaged in the work of helping to make industry safe. The mothers and wives of the men who toil have in their hearts a gratitude that can never be expressed.

It will pass without challenge that there is in the movement of labor a vast and comprehensive knowledge and understanding of the processes of industry. The organized labor movement can best help toward securing safety by being given the opportunity to apply its knowledge to the machinery and the processes of industry, by being taken into conference and council and given voice of a determining character.

To make industry safe calls for application of all the knowledge there is, all the genius there is, all the good will there is. Make way for full and free expression of the knowledge and the genius and the good will of labor and you make way for all the help there is in labor for safety.

Shut labor on the outside and you stifle its interest and its intelligence and its good will. The will on the part of employers to promote and establish industrial justice will give to those who labor in industry the incentive to put forth their best efforts, mental and physical. From this the movement for safety cannot but profit. Safety, in its broadest sense as well as in the realm of purely mechanical matters, depends for its fullest impetus, its fullest realization, upon the free and full acceptance of the workers as human beings endowed with all the rights and privileges and abilities of human beings. Safety will increase as liberty increases. Those whose brains and souls are ensnared in bondage have the least care for the welfare of their bodies.

MR. WOLL: Since this is an industrial Congress the purpose of which is to give free expression to views, the chair invites the views of the audience regarding safety in industry, and what is best to do to make industry safe.

COMMISSIONER CONNELLEY: I would like to suggest, at this time, that the Congress send Mr. Gompers an expression of sympathy and regret.

MR. WOLL: It has been suggested that the Congress send a letter of sympathy to Mr. Gompers, President of the American Federation of Labor, at Washington. It is unanimously carried and the chairman, Mr. Connelley, will instruct the secretary to send a telegram or a message.

COMMISSIONER CONNELLEY: Before we adjourn, I wonld like to make a statement, and I hope Mr. Woll will find it possible to remain over tomorrow. We have the Industrial Physicians' Conference tomorrow, and their program will take both sessions.

It costs this State almost $900,000 a year to rnn this Department and we will still need more money. We are making every effort to do what we can for the saving of life and limb. One of the first States that entered the safety movement was this State of Pennsylvania. We have 225 people that we are trying to take care of in the Bureau of Rehabilitation, trying to help that man or woman who has been injured in indnstry. It is a strennous task, but the American Federation of Labor in its organization can help and I know they will.

Many of the people that suffer from these accidents, are people who have not been educated—mostly foreigners who do not understand the English langnage, and cannot read or write. This war has shown us the necessity of Americanization and the necessity of teaching English to the foreigner in this conntry. We are trying now, if possible, to prodnce and re-create that mature undeveloped mind, trying to educate them and place them in a position where they will know life is worth living. The meeting now stands adjonrned.

THURSDAY, MARCH 25.

MORNING SESSION.

CHAIRMAN: DR. FRANCIS D. PATTERSON, CHIEF, DIVISION OF INDUSTRIAL HYGIENE AND ENGINEERING, DEPARTMENT OF LABOR AND INDUSTRY.

COMMISSIONER CONNELLEY: In opening the tenth annual conference of industrial physicians and surgeons as a part of the Pennsylvania Safety Congress, I desire to promise you that this particular feature of the Congress will receive a more prominent place in our future Congresses. We are becoming more and more acquainted with the work of the industrial physicians and surgeons, and, as laymen, are beginning to understand something of the great service that you render to industry. My hope is that this conference will develop the enthusiasm which has been characteristic of the sessions of the past three days.

Dr. Francis D. Patterson, upon whom we depend much in getting our Division of Industrial Hygiene and Engineering the proper recognition in the State, will act as your chairman. Dr. Patterson needs no introduction, therefore, I am just presenting him to you—Dr. Francis D. Patterson, chief of the Division of Industrial Hygiene and Engineering, Department of Labor and Industry.

DR. PATTERSON: Commissioner Connelley, Ladies and Gentlemen: This, as Commissioner Connelley has just stated to you, is our tenth conference of industrial physicians and surgeons, and I believe that the members of our profession never had a more wonderful opportunity for service.

It is more essential today than it has ever been in the past that the health of our man-power should be conserved. Emigration has replaced immigration, and this simply emphasizes the necessity that all workers should be maintained in the maximum of good health, so that the greatest possible protection may be achieved, thereby the cost of living reduced. Plant medical service should be brought to the maximum, for, by its efficient use, lost time, due to sickness and accident, can be reduced to the absolute minimum.

Our profession should give heed to the demands for new legislation. There is under consideration in the New York legislature, now in session, a bill for health insurance, and still another bill providing for what might be termed a form of "state medicine." Here in our own State, a commission has just been appointed to investigate health insurance, and the members of our profession have a wonderful opportunity to be of real service in helping the commission to arrive at fair and just conclusions.

If we search through medical literature, we will find that it is the consensus of opinion that the average lost time from sickness per person is six-days per year, but unfortunately, the law of averages does not apply in the case of sickness; for when sickness comes, it falls with crushing severity upon the unfortunate person, and the lost time of that individual may be many times the average period of six days.

It gives me pleasure to announce that the distinguished, able and efficient Commissioner of Health of this Commonwealth, Dr. Martin, has a new plan for arousing the interest of our people in public health. He has organized the Pennsylvania Health School, of which, our distinguished Governor Sproul was the first pupil, and it is his hope, with the co-operation of the physicians of our Commonwealth

and of the managements of the various industrial plants, that he will have at least a million students in that school, and the public health will be correspondingly improved.

The world war, though it was a horrible tragedy and blight upon civilization, has brought to our profession a great increase in knowledge of new antiseptics, and of rehabilitation of those who fall by the wayside. Much knowledge came out of the war experience on the rehabilitation of war cripples, and four states—Pennsylvania, New Jersey, California and Illinois—have each passed a law providing for the rehabilitation of the industrial cripple. We, here in Pennsylvania, are making a good start on this most important problem.

It is my very great pleasure and privilege this morning to present to you, Dr. Mock, President of our American Association of Industrial Physicians and Surgeons, who will speak to us from his vast experience on "The Rehabilitation of the Industrial Cripple."

THE REHABILITATION OF THE INDUSTRIAL CRIPPLE.

BY DR. HARRY E. MOCK, PRESIDENT, AMERICAN ASSOCIATION OF INDUSTRIAL PHYSICIANS AND SURGEONS, CHICAGO, ILLINOIS.

I will take it for granted that everybody here knows the great need for salvaging the disabled from industry and the magnitude of that problem. Without presenting further facts, therefore, it is safe to conservatively estimate the total number of permanently disabled from industry annually at half a million people.

From the farms, from the streets, and from the diseases and accidents of every day life there is added another million of handicapped individuals annually. Each year the total of already existing cripples is augmented by this annual crop.

When we consider that 30 per cent. and more of our young manhood between the ages of 20 and 30 were handicapped, that many of these had greatly lowered efficiency, or no productivity at all as the result of their disabilities, we are forced to recognize the truth—we have been a wasteful nation and have done little toward conserving our man-power.

With the wholesale human wastage of war came the nation's awakening. From the President, from statesmen, from recognized leaders in the medical profession, from great educators and from shrewd, broad-minded business men went forth promises and words of encouragement to the disabled soldiers and to those who were still sound but liable to suffer the wounds of war.

The "nation's draft of honor," our President called it in promising complete rehabilitation to all disabled soldiers, or solicitous and tender care to those rendered helpless. Our medical department promised physical restoration as nearly to the maximum as possible, and our educators promised vocation training and refitting for suitable employment for all who needed this service. While thousands of employers promised jobs to the disabled soldiers, promised them the opportunity to make good in spite of their handicaps.

Conceived at the high tide of patriotism, "reclaiming the disabled" stands forth as one of the greatest ideals born of this war. And that ideal still lives and is growing in spite of the past dark days jealous and enmity between individuals and various bureaus of the government, in spite of the inefficient, red-tap bound machinery set up by the government to redeem its promises to the disabled soldiers.

Oh, if the President in his wisdom, could have listened to the pleading of those working in the vineyard and appointed one agency only—preferably a commission of three of our most qualified citizens—to take full charge of the reclaiming of our disabled soldiers instead of leaving it to the duplication and buck-passing of at least four different bureaus! And there is still need for this single agency—still need to take this gigantic job of repaying "our draft of honor" to those who sacrificed so much for us out of the realm of politics and bureaucracy.

But the ideal itself has been spread broadcast throughout the nation. From the salvaging of disabled soldiers has sprung the vision of applying these principles to the civilian disabled—to the great casualty lists from industry.

Physical reconstruction and rehabilitation, or the science of reclaiming the disabled, has received intensive study during the last three years. Prior to that time industrial medicine and surgery had been developing various brands of this science, had been learning to study group problems and apply group methods, to co-operate with lay agencies in order to solve great medical problems and had plowed the field for this newer vision the extensiveness of which none realized.

As a result of this intensive study these facts and principles have been developed:

1. Hand in hand with all efforts at reclamation there must be a greater effort at conservation—preventing the great casualty lists.

2. Medical and surgical procedures for the sick and injured must be directed toward their maximum functional restoration, as rapidly as possible, with the viewpoint of each individual's future economic usefulness.

3. The employment of hospitals during the acute stage is essential for best results, but hospitalization should be avoided. Thus, each community should have convalescent homes, or centers, where the chronically injured or diseased could be removed and convalesce under the most favorable conditions away from the deleterious surroundings of the hospital ward. In the hospital or in the convalescent center occupational therapy, physical therapy, games, supervised physical training, mental studies and recreations should all be utilized toward accomplishing the physical cure and restoring the patient to an economic usefulness—a productive individual.

4. Medicine, education and industry must become closely linked in this process of human reclamation; medicine to cure the patient and, in cases of long drawn out convalescence, to co-operate with education in fitting the individual to overcome his handicap instead of yielding to it. Again, education can spread the gospel of prevention to all school children as well as to the adult community. Finally education plays an important role in vocationally training the handicapped person to some specialized line of work where he can best utilize his remaining powers effectively. Industry must co-operate in this work by applying the laws of prevention to both accidents and occupational diseases, by providing adequate medical, surgical and hospital service to all injured and disabled workers, and by replacing the handicapped in employment where they can be efficient and where opportunity for development is theirs.

5. The placement of handicapped persons in employment must be based upon this formula: Physical qualifications plus occupational qualifications, equals the job.

In the last analysis, this should be the fundamental principle behind the medical examination of applicants for work. When the physical qualifications are too defective, or when it is possible to improve them, the doctor should take charge of the case. When the occupational qualifications are lacking in a given physical handicap then the vocational training experts must be called in. Frequently the two experts can work on a given case at the same time with real benefit to the patient. Proper placement of such individuals must naturally follow.

6. Supervision both medically and vocationally must continue in all handicapped individuals in order that this reclamation process may be completed.

Here in Pennsylvania we have an example of a rehabilitation plan under the Department of Labor and Industry with medicine, both preventive and curative, education, placement and supervision endeavoring collectively to rehabilitate the disabled from industry.

Therefore, I feel that my prophesy made in this hall in 1917 is coming true—namely that the greatest by-product of this war will be human conservation and human reclamation.

DR. PATTERSON. I am sure that each of us appreciates this most illuminating address by Dr. Mock. We will, however, let the discussion go until later.

One of the problems of industry is the case of a workman's meeting with an injury, being treated in a hospital and then declining to go back to work, because he is satisfied with the compensation paid him. Something must be done to meet the problem, and I know of no man who can point out a chart to follow with greater safety than Dr. Judson C. Fisher, of New York City, who can tell us how he met the problem of the malingerer, and I am, indeed, pleased to introduce Dr. Judson C. Fisher.

THE PROBLEM OF THE MALINGERER.

BY JUDSON C. FISHER, M. D., SPECIALIST IN INDUSTRIAL INSURANCE, NEW YORK CITY.

No state or government has discussed workingmen's compensation acts without at some time during the discussion someone has raised the problem of the malingerer. Persons who have not spent a great deal of time in study, or who lack experience in the practical working of industry will magnify the problem to a great extent. Others, presumably well informed, will minimize the problem even to the degree of calling it, as did Hon. Royal Meeker, "a figment of the overheated imagination." Suffice it to say, however, that there is a real problem as every industrial surgeon recognizes.

As long as there is human nature so long will there be malingerers. As long as red-blooded men exist they will decry and seek to eliminate the man who lacks moral backbone and prefers to live at the expense of society. The problem is his detection and eradication. Malingerers were a problem in biblical history and they are a problem to-day.

The weakness which leads a workman to take advantage of benefits to which he is not rightly entitled is seen in the business and professional life also. The accident and health business could be conducted at much lower rates if professional business men claimed only what the policies intended they should receive. Even the clergy are not above claiming disabilities longer and greater than the facts warrant. Our problem, therefore, is one of nature. Our application will likewise be confined to industry.

There are two classes of malingerers—real and exaggerators. A real malingerer is a real crook and should be condemned as such—that is the result of the "survival of the fittest" instinct.

The real malingerers are about one in 200, in my experience, among all classes, and 30 per cent. among Italian and Polish longshoremen. Approximately 100 per cent. of their attending doctors are unscrupulous.

The exaggerators are those who have a legitimate accident, and after deriving benefits for a legitimate period for their types of accidents they malinger and prolong disability so as to get all they can. This class is about 25 per cent. of all accidents and 70 per cent. of longshore cases, in my experience. Strictly speaking, only about one man in a hundred will tell the accident board, "I was able to work three weeks ago, or on such and such a date, but my old job wasn't available or suitable and I had to find another." From this standpoint 99 per cent. are out to get all they can get.

The workmen's compensation laws contemplate disability only and not insurance of a job. In this class alone, if 99 receive an average of one week more than they were entitled to receive at $10.00 average per week, every hundred accidents would mean practically $3,000,000. This is a low estimate, because the malingering is not usually noticed until several weeks at least when the man's case is heard on the calendar.

He may even then be advised to return to work and his case continued. He may not appear at the next hearing or two and then return to work the day before the final hearing. His disability should not be measured by the date of return to work, but by the termination of disability. However, there are various other causes for malingering which throw some light on these moral cowards.

Malingering is common in the Italian and Polish races. Someone has said that elimination of foreigners will go far towards solving the problem. My study of this phase has convinced me that it is not necessarily the foreigner, but the vultures who prey upon them. By this I mean the unscrupulous men who coach the real or fake injured men, appear with them before accident boards, assist in making fake claims for compensation, give them a course under unscrupulous doctors in the "school for claimants" so as to fool the examining doctors and then regardless of the honesty of the claim, cash the awards and deprive the man of part of that which the state said he should have.

The age of malingerers is dependent upon local conditions. The amount of money coming into the family from other members, lodges, sickness insurance etc., plus perhaps rents or dividends from building and loan associations, often determines the length of disability at all ages. In general, however, more malingerers are found from 35 to 65 than among the younger ages. The younger the injured—the less prolonged the disability. It may be argued that that is because of the greater healing powers, but it is mostly because of the more need for money and ambition of youth.

Mentally, I class malingerers as abnormal—they are out of touch as it were. Revenge, ambition for sympathy and alms, mimicism, fanaticism or manic-depressive psychosis, combined with cunning, is the final analysis in nearly every case. The greater number of malingerers are among the less educated—we might say,—less civilized. The present social unrest has unstabilized the minds of many and they desire the life of ease at anyone's expense. There are cases where the doctor has actually made a man believe he is unable to work. Here may be a truly unconscious malingerer whose family suffers and the guilty doctor goes unpunished.

The employer may give benefits in addition to the legal benefits. This aids malingering because the workman is sometimes making as much while idle as when working. Delays in hearing cases, indiscriminate benefits for trivial injuries, allowing politics to interfere with business, lack of trained medical commissioners and freedom from prosecution are all causes contributed by the state. Sentiment, loyalty to family on account of practice, lodge doctors, unscrupulous and incompetent doctors all contribute their mite in unduly prolonging the disability.

Much credit is due the workman whose moral stability is weakened, but who rises above the various factors, solving his own problem. He becomes an example for good and not for evil.

Malingerers tend to lower the moral atmosphere. While examining a claimant I remarked as to his ability to return to work. He replied, "don't I need a brace?" Persistent questioning brought out the information the he knew a Mr. X. who had suffered a contusion to his leg, had been given a brace, which he wore at hearings before the industrial commission. He discarded the brace after each hearing and would work as a bartender in the meantime at increased wages over former employmen. He would repeat the performance at each hearing, bragging to those waiting for their cases to be called as to his "system."

He thus drew unjust compensation for 1½ years until a 100 per cent. American workman heard of it. He was traced, discovered and compensation terminated. Such a man is a moral leper in a group of workmen.

A malingerer in a group of workmen means that he will do haphazard work. He will by his example lower the standard of efficiency among those about him. There are always those who imitate the man who seems to be getting away with something. This results in a lowering of production and increased cost of production. The cost of claim department expense, medical expense, compensation benefits and loss of production in any one case of malingering is considerable. Let us conservatively estimate this at $200 per case. If 10 per cent. of employees malinger

and an industry has 2,000 men (not including turnover), the cost would be $40,000 to that one plant alone.

To detect malingerers will be one method in the groping around for methods to reduce the high cost of living. Malingerers who are working are classed as lazy, but in fact they are afflicted with ergophobia as long as they can receive enough to exist upon. Every large employer should have a competent investigator, who may be the surgeon, but a man in sympathy with the men whose mental strength is not as great as their physical strength.

All cases of continued inattention or laziness should be reported and not fired until the investigation proves the individual unfitted for the job. If malingering about his work is as apparent as malingering about his injuries, he should then be refused association with those whose motto may be industry and efficiency. No method is too severe or too quick to remove the moral lepers from the payroll.

Local benefit societies and bonus systems go a great way toward solving the problem as far as the employer is concerned.

Stability of labor, that is, the least possible labor turnover, means loyalty of labor. Labor asks no charity, but recognizes assistance and interest of the employer. Faithful employees will practically eliminate the malingerer by the application of the square deal principle. Workmen are quick to detect slackers, and by their insisting that the slackers quit or work they aid in the solution of the problem.

When, in 1916, in Pittsburgh I said that the surgeons of Pennsylvania would be launched into a new specialty—industrial surgery—I did not have in mind the usual advances in the science of surgery to which they all subscribe, or that injuries would be cured any quicker. I had in mind the viewpoint which passes from the pathological to the vocational. Under the liability law, when a man was injured he usually settled and the surgeon or the employer didn't have much concern as to the length of disability. Workmen's compensation, however, has brought the new viewpoint, that of returning the injured employee to work in the shortest time with the best possible surgical results, but in addition having in mind the ability of the injured to resume work.

It is no longer proper to say at the end of two months, "Go back to work. Use will loosen up the joints." Now it is, "You are able to resume your usual vocation." To be able to say the latter has resulted in longer disability but with better function. It has cost more medical expense, but better high medical cost and less cost in total permanent disability.

This viewpoint tends to spot the malingerer. The employer depends upon the surgeon to protect his interests. The malingerer rubs salt in his skin, makes false bruises, ties tight bandages above to cause innocent edema of the arms and legs, plasters on the back, and hundreds of devices for the simulation of injury that the cunning and unscrupulous doctors have taught and demonstrated in order to fool the industrial surgeons.

All real surgeons have the human element in mind and do not desire to be so involved in the medical problem that they forget the other points of view. Hence we have the malingerers trying to outwit the doctor in his honesty to the trust of the employer and faithful employee. To detect the malingerer is to be of service to both the employer and the rank and file. Detection is a matter of study. Complaints of subjective symptoms only, make a good case for the neurologist, and every industrial surgeon should have neurological training.

If careless in examination or termination of disability the surgeon may do an injustice. The man may have a stronger body for his later years if he is allowed sufficient rest and recuperation now, instead of plunging him into industry and trusting to nature. To improperly brand an honestly injured man as a fakir is one of the most serious of errors. A surgeon can put on the wrong medicine

and rectify it, but a wound in the heart of a sincere workman is a wound hard to heal. On the other hand the surgeon should detect the fakir because it is essential that the doctor himself be not imposed upon.

The curse of too much work for the surgeon allows many a malingerer to go by unnoticed. The surgeon hasn't time to detect him and he continues to enjoy his unearned money. Every industrial surgeon should leave the technical side of surgery as soon as possible. His assistants can do the operative work unless it be out of the ordinary, and thus give him time for study and supervision.

Industry should furnish the chief surgeon with social investigators and a proper system of reporting accidents. There should be careful medical and social examinations of the employees at the time of hiring and every six months thereafter. Then the surgeon can tell how many hernias, varicose ulcers, etc., have actually arisen out of, and in, the course of employment. Objection to this will be made, of course, in that the men who are rejected altogether are thrown on the industrial scrap heap. In one industry 120,000 applicants were examined and 12,000, or 10 per cent., rejected altogether, 66,000 had no disability. The rest were accepted with the defects noted.

If the legislators would allow the employer credit for disabilities at time of hearing it would cut down the malingering in this respect and the 12,000 would not be rejected. One cannot blame an employer for not taking sub-standard men when the accident boards in most states continue to rule that aggravation of a former condition entitles a man to full benefits under the compensation law. A ruling by the boards as to a definite term of disability for definite injuries in the complicated cases would encourage employers to employ the sub-standard men to keep them from malingering or, worse yet, to be in the so-called industrial scrap heap.

The science of detection of malingerers is a study of doctors in executive session. The schools supported with the sole idea of fooling the medical examiners by simulation of injury, know too much now. During the last month a liability claimant bragged that he had three houses worth $30,000. When asked how he did it, he said "by faked claims," adding that he had claims pending in New York, Allentown, Philadelphia and Washington, and that he had settled a claim against one insurance company for $800 the day before.

The detection and prosecution of this man would save other employers lots of money and bother, but best of all it would aid society, in that it helps brand the meanest of crooks. The detection of malingerers is a science in itself and should be studied as such. Research laboratories should be conducted for the best methods and sure methods. Post-graduate courses should be given so that the industrial surgeon will be of benefit in curing all the ills of industry as the name implies.

The industrial board is just as synonym in our form of government for justice. No one branch of government, unless it be the courts, has such responsibility. In court the cases are decided upon points of law almost entirely. In workmen's compensation boards the cases are not bound by rules of evidence, and justice is administered in proportion to the amount of human understanding and common sense of the members of the board unfettered by political affiliations. A serious problem is one of the malingerer.

It is interesting to note the attitude of various industrial boards as to malingerers. In discussion as to the waiting periods there always comes the argument "reduction of the waiting period before compensation starts, increases the malingering." My belief is that the reduction of the waiting period of seven days has no connection with malingering—a crook is a crook. The attitude of some of the various boards in this particular may be summed up in a reply dated February 2, 1920, from the New Jersey Workmen's Compensation Bureau: "We do not find any additional tendency to malingering as a result of the reduction of our waiting period."

Similar replies to the same question were received from Pennsylvania, Massachusetts, Illinois, Kentucky, Wisconsin and California, where the waiting periods had been reduced. It will be noted that these boards admit the problem but not the reduction of the waiting period as a cause.

Not to detect the malingerer is unjust both to the employer and to the honest workman. It is unjust to the employer in that it compels him to pay unjust benefits and lowers the morale of the workmen with whom the malingerer associates. It is unjust to the honest workman because labor is entitled to every cent the injury calls for. If the malingerers are detected and dealt with, then without increasing the yearly cost to society the workmen could receive increased benefits.

The problem of the boards is to detect the fraud. Unjust, unduly prolonged disabilities are passed every day by the boards, trumped up claims are allowed also. Why is this? There are two explanations. The first is that the boards are not allowed by law the services of industrial surgeons skilled to detect malingerers. They have to depend upon the employer's surgeon or the family doctor, or surgeons not having the vocational viewpoint. They view with a certain amount of suspicion the medical reports, as was done in the old liability days when injuries were minimized or magnified in order to obtain a less of greater amount of money.

In these days of industrial medicine we hear less of this suspicion because the boards realize that the employer's surgeons are now endeavoring to restore the injured to productive industry, and that their ideas as to the compensation cases are governed by the new viewpoint.

The second explanation is that they fear to offend the labor men and their unions. They may lose sight of the fact that malingerers impose on labor unions as well. They also must realize that the best element in labor circles demands that labor receive all the benefits to which it is justly entitled, but it decries the slackers. Malingerers should be exposed by the workmen and expelled by their employers.

The boards would detect more malingering if they had emergency calendars presided over by a competent medical commissioner. Then suspected cases could be immediately heard and investigated. If the claim were meritorious, well and good; if the claim were fraudulent then there should be immediate prosecution. Every board has had cases where perjury was openly committed and proven, but how many perjurers were ever punished?

As custodians of millions of dollars of money and filled with desire to be fair to all, the boards are entitled to proper medical advisors whose word shall be unquestioned in matter of malingering. It is then that they will be faithful in protecting the interests of society as a whole.

No one objects to assuming his just burden of cost or taxes. Likewise no American desires to assume the burdens imposed by a malingerer. He sees no reason why the malingerer at the expense of society should draw benefits to which he is not entitled.

Society knows that one element contributing to malingering has been the laxity of the employers, industrial boards and fellow workmen to weed out the malingerer. Society knows that in the early days of compensation malingering was not common. It knows that the methods of performing the work has not been changed much, the type of the workmen has not changed, the types of injuries have not changed, and that the wages are higher and theoretically there should be less malingering on account of small benefits. It also knows that there are a greater number of reported accidents in proportion to wage earners than there were in the early days. It demands an answer and I think there are two:

First: The encouragement to defraud. There has been high pressure due to war and a carelessness in detection and punishment of malingerers, lack of time on

the part of the examining doctors to study the cases, lowering of morale by the bad examples set and the general unrest in regard to easy money.

Second: The legal reconstruction and education. Each state continues to attempt to perfect its laws and to give the workmen a better understanding of their rights under the law. The reduction of the waiting period alone in 27 states to seven days or so has caused an increase of 50 per cent. in compensable cases. The credit rating system plus safety-first movements have resulted in the employee becoming educated in reporting at once the least scratch or injury.

Each malingerer is a dead weight on society. His proportionate cost is passed on to the consumer and the workmen pay their share of the increased cost. Society, in my opinion, should demand as one means of decreasing the high cost of living that labor assist the employer to purge the rank and file of those morally unworthy.

Society desires to preserve its ideals and anything which aims to destroy the moral fibre must be eliminated. Then we can unite in promoting comfort and happiness for all.

The malingerer we have with us. My statistics are not in shape for publication yet, but, in any event, he is in the minority. To detect him we need co-operation.

1. Of the able industrial surgeon.
2. Of the employer.
3. Of the honest employees.
4. Of the industrial accident boards.
5. Of society as a whole.

Then, we shall give increased benefits to workmen without increased cost to the employer, and return to productive industry those who have fought a good fight and kept the faith. The slackers have no place in society. They have no right to attempt to lower the morals of the ninety and nine, or to take from the families of the worthy in order to feed the unworthy.

It is our duty not to forget, and only fair to emphasize, that the vast majority of the wage earners of this country desire to do the right thing, and that the bulk of the workmen's compensation problem has not to do with fakirs and malingerers, but with self respecting, self reliant American citizens, whose rights should be protected against the demoralizing and socially wasteful curse of malingering.

DR. PATTERSON: I said Dr. Fisher was going to point out a chart for us to go by and he certainly has done so. We pass on now to heart disease. Dr. Mock touched upon the heart. Every one of us comes in contact with this condition, either directly or indirectly. Dr. Robertson, of Philadelphia, will tell us about, "Heart Disease in Relation to Industrial Efficiency." Dr. Robertson.

HEART DISEASE IN RELATION TO INDUSTRIAL EFFICIENCY.

BY DR. WILLIAM EGBERT ROBERTSON, PHILADELPHIA, PA.

The topic assigned me is one of considerable difficulty when viewed from the standpoint of industrial medicine. This is due in part to the relative newness of this field of endeavor, and the scant literature having any direct bearing on the subject; in part to the personal equation of the examiner, and not least, to the lack of definitely recorded data, data obtained according to occupation, based upon thorough and complete study of those who for the first time enter the labor world, supplemented from time to time by further examinations, in order to determine the effect of any particular occupation on the cardio-vascular apparatus of the worker, or, possibly upon a group of workers in any occupation.

Then, too, labor is almost as shifting as the sands. Change of occupation is frequent, and quite often, places geographically remote are chosen by the worker. Granting them the complexity of the problem, how shall it be approached? Perhaps the first point of importance is the realization of the fact that in Pennsylvania at least, the compensation board has decreed that an employee is entitled to compensation if it can be shown that strain or sudden effort provoked cardio-vascular disease, and the same is true, too, when these factors can be shown to have operated upon an organ previously diseased.

The Supreme Court recently decided that compensation is recoverable when apoplexy occurs in the course of one's occupation, if any strain or trauma, or brief, sudden and unusual experience have been sustained. It must be evident, therefore, that physical examinations should be made with care, and that careful records should be kept, in justice alike to the employer and employee. It must be equally clear that the discovery of a certain heart lesion may partially or totally disqualify an applicant for work, or may lead to his transference to some less arduous labor.

It is here, perhaps, that the physician engaged in industrial work may be of the greatest use. He may be able to maintain the worker as a self-supporting member of the community. This assumes of course, that the doctor's position is more than perfunctory, something more than a mere compliance with the law's demands, without any real reference to the welfare of those who labor. A laboring man should not be subject to the mere whims of one who perchance happens to be his boss, when, for reasons of ill health, not seldom directly traceable to the nature of his occupation, he is brusquely dismissed. That should be a matter on which the doctor should pass.

I recently saw a poor fellow employed in a large industrial plant, who told me it was safer to stay away from work in the hope that he may regain his health, rather than suffer peremptory dismissal if he dared utter to his boss the fact that he felt unequal to the heavy labor in which he was engaged, and would like some lighter work. It should not be too much to ask in this sense that the conservation of energy be preserved.

Again, whose duty is it to study the question of fatigue as a factor inviting acute injuries, traumas, or, operative over a longer period, causing more or less nervous or physical breakdown? Should this be left to some foreman of a gang, or should the doctor familiarize himself with the various branches of the plant in which he may be engaged, in order to study the possible connection be-

tween fatigue in relation to time of day, day of the week, season or particular occupation, and very many other phases of this important subject?

It is common knowledge that effort, both physical and mental, are followed by more or less fatigue. In the normal individual however, the usual amount of rest entirely compensates and restores the balance. Periods of work and the necessary periods of rest, are equally well known to be variable factors, depending upon the individual. The human machine, in some respects, is quite similar to any other machine, though in the human, rest automatically repairs the damage done, while in the case of the ordinary machine, friction manifests its malign influence at a relatively early date.

Again the human machine, within normal limits, is actually benefited by the work done, in that it improves the muscle tonus and general power. It is a fact however, that even the human machine has its limitations, and these limitations are among the most difficult things to be determined in the case of any given individual. Recognizing the part played by the psychic in every individuality, to be entirely just, this factor must of necessity be taken into consideration in dealing with the subject of fatigue.

We all know that disinterested effort is far more pernicious in its effect upon the economy, and that sense of tire is more readily developed than when one's occupation fails to bring with it, joy in its performance. It will be manifest therefore, that fatigue may exhibit itself either as a normal condition, from which complete recovery is obtained by either a single rest period each night, or, from time to time a rather longer rest period, accompanied by a change of environment.

Pathologic fatigue, on the other hand, is either an expression of a damaged heart, a latent tuberculosis, or of that more indefinite relationship between effort and the physchic attitude to one's work. This form of fatigue is essentially cumulative, and in its insidious phases would seem to constitute one of the most serious of industrial hazards, not alone because of its direct potentiality for harm, but even more insidiously because it invites accidents, and further by lowering the residence, doubtless increases one's susceptibility in many directions. Every function of the human machine is more or less impaired by this form of fatigue, as will be most readily appreciated by those whose occupation requires the finer forms of co-ordination.

It is not germane at this time to pursue the various methods of approach in the study of fatigue with any degree of thoroughness, though brief reference will be made to some of them. Laboratory studies are purely academic, for thus far no practical application can be drawn from them by those engaged in industrial work. Many valuable suggestions, however, are contained in a recent book by Frank B. and Lillian M. Gilbreth, entitled "Fatigue Study, the Elimination of Humanity's Greatest Unnecessary Waste. A First Step in Motion Study." In the foreword, they ask, "How big is the loss of our nation due to preventable fatigue?" Of the 110,000,000 people in the United States, it is estimated that more than 30,000,000 are engaged in occupations in which unnecessary fatigue reduces their output.

"It is a conservative estimate that unnecessary fatigue costs each of these workers in their producing and earning capacity, much more than 10 cents per day for each day. Now to be conservative, let us say only 20,000,000 workers, 300 days, at five cents each per day. This amounts to $300,000,000 per year. Capitalize this on a 4 per cent. basis and try to realize the possibilities of the fatigue study movement in the United States."

Then justly observe that this does not take into consideration:

"The decline in health due to continued over fatigue."

"The loss due to idle days and increased labor turn over."

"The losses in benefits resulting in hearty co-operation of employers and employees, possible only when both are solicitons of each other's interests and comfort."

To the uninitiated, the various methods of precision employed in the study of motion in its environmental relations, with a view to lessening fatigue, will prove little short of astounding. It may not be amiss to refer to some of these mechanical methods applicable to the study of fatigue in general before proceeding to a description of the more ready clinical methods of value in the group of cases comprised under the caption of this address.

Photographs and particularly stereoscopic photographs, furnish an accurate record of the environment of the worker, and are of even greater value when made according to scale, what might be termed scalar photographic records. Even more definitive in its direct relation to the worker in the scalar cinematograph. By the addition of a special chronometer and a screen background made to scale, every motion made by the worker can be studied in detail, both as to time and space. By attaching small electric light bulbs to any particular part of the worker or group of workers subjected to this intensive study, so called cyclegraphs can be made, motion pictures which will record in thin lines, every motion made by the worker.

Interesting and practical as this work undoubtedly is, it is not directly applicable to the subject in hand. What we need is, as previously stated, a ready clinical method in our study of the heart and circulation in relation to industrial efficiency. Unfortunately, recorded data are the exception, and even then often fragmentary. Then, too, the shifting character of labor adds to the difficulties, so that, under existing conditions, it is not possible to establish, except in a very general way, the effect of any particular occupation upon the human economy.

I believe the time will come when industrial efficiency will be properly recorded and chartered. Such records could be interchanged when necessary, so that a record would follow an individual in his various fields of effort, of value both to employer and employee. Much unnecessary expense and duplication of plants would be avoided if groups of employers were to pool their interests and establish a central plant for the study and appropriate recording of their employees. Cardiographic and other definite methods of approach would then be possible, which certainly is not the case at present.

This would not militate against the maintenance of a surgical dispensary in those plants where the risks of occupation make them necessary. The whole trend of this field of endeavor as I see it, is to conserve the worker, truly a humanitarian object, but properly handled it would do still more. It would serve to prevent many from becoming charges upon the community, through the recognition of defects at a time when change of occupation might serve as a conservation process. Thus, may the integrity of the family be conserved.

In studying the heart in relation to industrial efficiency, it is imperative at all times, to keep in mind the particular character of the work to be performed. In consonance with what has previously been said, it should be our object, not alone to detect any abnormality, but to attempt to arrive at some conclusion as to the fitness of the individual for any special work.

No attempt will be made in these remarks, to deal with the electrocardiographic method of study, nor with blood pressure observations, but merely to narrate such methods which will be easy and simple of execution, in the course of any routine physical examination. Of first importance are the position and quality of the apical impulse of the heart. Normally in the fifth interspace in the mid-clavicular line, displacement means hypertrophy, with or without an endocarditis, dilation, or both of these, adhesions or mechanical displacement by effusion or new growths.

It would carry us too far afield to consider each of these factors in detail. Let it be borne in mind, however, that of all forms of endocarditis, mitral stenosis gives rise to the least degree of apical displacement, often none at all, and that mitral regurgitation is always associated with moderate displacements to the left, even a little downward, but that aortic lesions cause the greatest degree of hypertrophy of the left ventricle, hence displacement, and aortic regurgitation causes most of all. An exception to the rule, as far as aortic stenosis is concerned, occurs in those who have developed the lesion at or beyond the fiftieth year of age. Under such conditions there is usually very little hypertrophy, though the collateral phenomena will be the same.

Again, when endocarditis is acquired in earlier life, before ossification is complete, more or less bulging of the precordium occurs, especially noticeable just within the left border of the sternum. Acquired later in life, no such prominence occurs. The quality of the impulse does not lend itself well to descriptive terms, but if forceful and well circumscribed it means hypertrophy, while a less forceful and more or less diffuse impulse bespeaks dilation. We possess in Abram's reflex however, a quick and simple method of differentiating. This presupposes the ability to outline the heart area. Of course, this could be done very accurately by means of teleroentgenography, but for our purpose, very light percussion will yield definite and dependable results.

Since sound is transmitted in direct proportion to the density of the medium, light percussion, using a single finger as the plessor, will accurately outline the heart, for the sound is absorbed by the underlying heart, no adventitious sounds being produced. Having marked the outline of the right and left heart, make friction over the epigastric area for a minute, then percuss the heart area again. If the area was large and has not been reduced, we are dealing with simple hypertrophy. If the area reduces only in part, we have both hypertrophy and dilation, or dilation alone when the area reduces to the normal. Within two minutes the heart area returns to the original outline. The tonal qualities of the first and second sounds and reduplications are of importance, as are the relative lengths of the sounds and pauses, but experience furnishes the only avenue through which these may be properly appreciated. The rate however, can be employed in estimating the quality of heart muscle.

Normally, after moderate exercise, such as hopping 100 times on one foot, the rate will increase 10 to 30 beats above the previous rate, but within two minutes will return to the normal. In proportion to the degree of deterioration of the heart muscle, the rate will increase and the greater the increase, the slower the return to normal. When to this increase in rate is added dyspnea, with a sense of substernal pressure, the muscle involvement is very definite. In such instances by auscultation the muscle quality of the heart sounds will be found weakened, arrhythmia may be induced, and not seldom a relative mitral systolic murmur. In the over-acting heart an induced mitral murmur may simulate mitral stenosis.

Morison has shown that inhalations of amyl nitrite will accentuate the organic lesion of the valve. Whenever in doubt as to the possibility of mitral stenosis in any case, this is an excellent diagnostic aid. When simple tachycardia is present, Benjamin and Brooks have shown that merely bending the head forward at an angle of 45 degrees will promptly retard the heart rate. Fliessinger has reported similar results with respect to respiratory effort in paroxysmal tachycardia. Sustained respiration, deep inspiration and prolonged expriation will often slow the heart rate.

The so-called oculo-cardiac reflex may also be employed. By this is meant pressure on the eye balls. Balard, using this method, reports the cases of four soldiers in whom the heart stopped from 15 to 20 seconds during the time the reflex

was being studied. Balard states that this reflex serves to determine the tone of the vagus and indirectly, of the sympathetic. Firm pressnre over the eyes in some instances has resulted in colic, nausea and collapse. During ocular pressnre a functional cardiac murmur will disappear, while the mnrmnr of mitral stenosis will remain unchanged or even become more marked.

It is claimed by Voisin and Benhamou that pressure on the right eye causes more effectual and more prolonged slowing than pressure on the left. They also claim that hysterical convulsions and tremors can be stopped by the use of the oculo-motor reflex. Of course, it may be necessary in cases of tachycardia, repeatedly to have recourse to the nse of this method. The rhythm of the heart is of importance in onr estimate of functional capacity, and in cases where vasenlar disease is at all marked, especially if aortitis is suspected, pain, altered mnscle tension and areas of hyperalgesia or more rarely of anesthesia, may furnish valuable information.

As to the rhythm, so very many factors may be responsible, that the snbject can only be dealt with here in a fragmentary manner. It mnst not be forgotten that irritation acting upon any part of the great vagus system, may cause arrhythmia. Even the act of swallowing will canse bradycardia and sometimes irregnlarity of rhythm, through irritation of the esophageal plexus. Gastric and intestinal disturbances of various kinds may also canse arrhythmia, in snch cases, often rather definitely related to the time of taking food.

Another form is related in the gall bladder and its diseases. The right vagus, often receiving a twig from the abdominal sympathetic, supplies the gall bladder. It is said that it is the right vagus which is directly related to the sino-auricular node, the pacemaker of the heart. It is qnite evident therefore, that distnrbances in cardiac rhythm will, and do occur in gall bladder disease, and it is conceivable that thophic influence is exerted by the vagus, for we know the tendency to myocardial degeneration in gall bladder cases, degeneration which cannot be explained solely on the ground of infection. Fortunately, disturbed rhythm in the majority of cases is a very little significance. One form however, is of grave import, and in any syspected myocardial case, shonld be most carefully looked for, and that is the pulsns alternans type.

Both the heart and the aorta, in view of their intimate association with the sympathetic nervous system, may give rise to many viscerosensory-motor reflexes. Angina pectoris best exemplifies this. One of the simplest, as far as the heart itself is concerned, is known as Peter's sign, clinically an area of tenderness in the fonrth interspace to the left of the sternum, in cases of myocardial degeneration. Pain in the precordial or scapular and infrascapular region or parasthesia or hyperalgesia in these areas, may signify myocardial disease with or without valvular lesion, arteriosclerosis, or failing heart muscle in the course of chronic renal disease. More or less evidence of ill health may exist, in some cases mental depression, but the hyperalgesia, and when this is present, increased muscle tension, occnrring in the precordial and scapnlar regions, are to be explained by irritation of the fifth and sixth spinal cord segments.

To summarize, the essentials in an attempt to determine the fnnctional capacity of the heart in relation to industrial efficiency, are:

1. To ascertain the character of work and the nnmber of hours of continnons effort.

2. Make a complete physical examination and record the findings. This shonld include an examination of the nose and accessory sinuses, mouth and throat, for unsnspected foci of infection may be revealed.

3. Note carefnlly the position of the apical impnlse of the heart and whether systolic retraction is present—pericardial or other adhesions.

4. The tonal quality of heart sounds, rate and rhythm, presence or absence of murmurs.

5. Compare the two radials as to time and volume. An otherwise unsuspected aneurism may be disclosed by further study.

6. Put the individual through some exercise as hopping 50 to 100 times.

7. Then repeat the cardiovascular examination and in appropriate cases, apply the special methods outlined above.

NOTE: The mere presence of a murmur need not disqualify. Determine whether it is functional or organic. If the latter, the nature of the occupation will enter into consideration. The all important structure is the heart muscle. With perfect compensation, in the absence of all subjective and reflex phenomena, a case of endocarditis is a far better risk than one with even moderate, primary myocardial degeneration. Though of importance, it is manifest that no attempt could be made in this survey to go into the family or personal history or the habits of one under examinations. Only absolute essentials have been considered, and such a routine examination could be made in ten minutes, and five would suffice where no abnormality is revealed. About three minutes more would suffice to record all the data by dictaphone.

DR. PATTERSON: The last paper on our program this morning is regarding "The Physical Sub-standard Worker," and every man in industrial surgery today, I am sure, is familiar with the work performed under the guidance of Dr. Clark. His work has spoken for itself, and he needs no further introduction than just to say Dr. Irving Clark.

THE PHYSICALLY SUB-STANDARD WORKER.

BY DR. IRVING CLARK, THE NORTON COMPANY, WORCESTER, MASSACHUSETTS.

Mr. Chairman, Ladies and Gentlemen: The last paper on the program should always be a short one, so have courage—this paper is not very long.

Sub-standard workmen may be divided broadly into three classes; those who are sub-standard mentally but standard physically; those who are sub-standard physically but standard mentally; those who are sub-standard both mentally and physically. The problem is how we can make use of these men in industry and at the same time make them better workers and stabilize the large existing turnover which they create by wandering from one place to another.

The acute shortage of labor, which occurred during the war and which exists today, has made manufacturers appreciate a problem which up to that time had never come to their notice with sufficient force. The production of the country requires the use of every individual and requires his use to the very best of his capacity. Unless a sub-standard worker is properly placed, he is either an inefficient worker and, therefore, discharged by his foreman, or he becomes dissatisfied with the work he is doing, because physically he is unable to do it and leaves the organization to try work elsewhere.

This constant shifting is one of the greatest overhead expenses of industry. Alexander has shown that the average cost of every change of position is at least $35 to the employer. No statistics have been obtained as to the cost to the employee, but the combination of time lost from actual work, expenses which continue during his period of non-work, his traveling expenses as he moves from place to place, and his decreased earnings as he familiarizes himself with a new shop, must amount in each individual case to more than the sum which it costs the employer. The solution is the proper placing of the sub-standard worker in his proper place in industry and the ability to hold him in his position with a minimum amount of change.

If we consider our first classification from this point of view, it is evident that the man who is mentally sub-standard but physically standard can usually be placed without difficulty in heavy work requiring no particular mental ability. There are very many places of this type open in every industry, and if the work and wages are attractive there should be no difficulty in holding the man for a considerable period of time.

Where the mental condition is standard but the physical condition is sub-standard, the problem falls upon the industrial physician and it is with this class that he is able to do his most effective work. When both mental and physical condition are sub-standard the applicant is usually unfitted to work in any department of the factory, and it is advisable for his own good and that of industry that he turns his work into other fields.

Every factory of any size whatever is divided into departments. The type of work in these departments varies. If the type of work is analyzed it is found that there are two broad types, light work and heavy work, and if these are further sub-divided they will be found to consist of light work with and without special hazards, such hazards being dust, heat, humidity and other physical conditions which militate against the health of the worker. Heavy work may likewise

be divided into heavy work in which there is a good general working condition, and heavy work in which the workng conditions are poor.

It is evident, therefore, that in placing a mentally standard and physically sub-standard man that the particular type of work for which he is physically fitted be found if possible. If such an effort is seriously made by the industrial physician in consultation with the employment manager, a large amount of unnecessary discomfort to the workman, sometimes resulting in ill health and even danger, may be avoided, while from the point of view of the employer, a more contented worker and one who will remain more steadily on his job will be produced. In other words, proper placing should reduce turnover.

How is this proper placing to be accomplished? It is evident that no one by a casual glance can tell whether a workman is sub-standard physically or not. A careful and yet rapid physical examination is the only method by which the industrial physician can determine the risk of the applicant. In most factories where physical examinations are used, applicants for examination are classified into four great groups which are designated by the numbers 1, 2, 3 and 4, or the letters A, B, C and D.

The first group consists of those men who are mentally and physically standard. The second group consists of men who are mentally and physically sub-standard, but not enough so to militate against their employment in any department of the factory. The third group consists of those men of whom we have just been speaking, namely those who are mentally standard but physically sub-standard to such a degree that placing in some particular department is necessary. The fourth group consists of those who are so far sub-standard mentally or physically, or both, that they cannot be employed any place in the factory with safety to themselves, others, or property. (Classification of C. C. Burlingame).

The doctor, after his examination, having determined into which one of these four groups the worker falls, has two methods of procedure: First, he may write a prescription of the type of work which the applicant is physically able to do, or, second, he may confer with the employment manager as to the exact job upon which the applicant should be placed. In a large factory it is possible to place all but one-half of one per cent. of the applicants, and these will fall in the fourth of our original classifications, or Class D, namely, men who are unable to work in any department because they are mentally and physically sub-standard, or are so sub-standard physically that there is no department in which it is safe for them to work. Ability to properly place men depends upon the industrial physician's knowledge of the work in the various departments, and this knowledge can only be obtained by familiarity with the work and experience.

Sub-standard men usually fall into one of the following classifications: Cardiac, nephritic, pulmonary, hernial, syphilitic, special and general.

Cardiac cases which are unable to work are relatively few. Our experience confirms that of MacKenzie that hearts, even though they show, on examination, marked murmurs and even irregularities are usually able to stand moderate work for a number of years before showing signs of disturbed compensation. The industrial physician should not be interested in what he hears with a stethoscope so much as endeavoring to ascertain the condition of the myocardium, and though this is an extremely difficult thing to determine in a short examination, a functional test in suspicious cases will usually give him the lead in the right direction.

We have found that the army test of hopping the applicant 50 times on one foot, examining the heart before exercise and after, and noting particularly the rapidity of the purse, its force and regularity, and the time required for it to fall to normal, is a valuable crude method of determining of the function of the myocardium, but more important than the action of the pulse is the reaction of the respiratory center

to this moderately violent exercise. A patient who becomes breathless or shows any signs of abnormal breathing after this exercise, as compared with the normal man, is one who should be studied with great care and who should not be assigned work which will throw any strain upon the heart.

This point of breathlessness has been emphasized by Lewis in his recent monograph on, "The Soldier's Heart and the Effort Syndrome." This exercise also immediately shows up any cases of that mysterious condition known in the army as neuro-circulatory-asthenia, the familiar N. C. A. Though many of these cases were met in the army I have seen practically none in industrial work. However, they should be immediately rejected as they have no business in the hard work of industry.

NEPHRITIC—Nephritic patients can be most rapidly discovered by blood pressure. A good general rule is to make a blood pressure of all men of 40 or over, and urinalysis on all those showing a pressure of 140 systolic, 90 diastolic. Nephritic cases cannot stand the extremes of heat and cold which exist in many departments nor have they the resiliency against hard work that the normal individual has at the same age.

PULMONARY—The most frequent pulmonary condition found among sub-standard men is a latent tuberculosis. This may be discovered by a combination of the patient's general build, physical signs in the chest and breathlessness on exertion. Again we see the advantage of putting the patient through the 50 hops on one foot, and by this simple method we are able to judge two conditions, cardiac and pulmonary. Applicants with latent tuberculosis can be employed in numerous departments in the factory, but should certainly not be put in a dusty, dark, or humid workroom. If kept in a bright, dry workroom they are able to do excellent work without breaking down.

HERNIAL—One of the most perplexing conditions which the industrial physician encounters is hernia. Our general rule has been to be extremely careful about admitting men with hernias into industry, partly on account of the compensation risk in cases of strangulation, partly on account of the necessity of repairing the hernia if the man complains of pain after lifting, even if there is no increase in the size of the hernia, and partly because where there is a hernia on one side, there is usually a tendency for a hernia to appear on the other side. Compulsory use of trusses cannot be enforced, so that in the majority of factories there has been a strong feeling against the man who has a hernia.

At Norton Company we have made careful investigation of our hernial risks and as a result of our experience we have come to some conclusions which are rather opposite those usually held. We have found that the majority of our hernias have come from men who entered the company with no sign of hernia whatever, but in whom a hernia has gradually developed while at work. This has been particularly noticeable in the Southern Europeans. Among the men who have hernias, some of them large, who were in the employ of the company when physical examinations were first started, we have had no trouble whatever, and recently we have gone so far as to admit applicants for practically any position in the factory who have complete hernias, providing they have been doing heavy work up to within one week of their commencing work at Norton Company. We find that the majority of these men who have old fifth-degree hernias wear trusses, are familiar with the application of these trusses and take care of themselves, and that they are, on the whole, less risk than the Southern European with a weak external ring or weak muscles in the region of the rings. Our experience may prove that we have made a mistake in this, but so far our judgment has produced satisfactory results.

SYPHILITIC—A diagnosis of tertiary syphilis is very difficult in the short examination which is given the average applicant. However, if the factory hospital is used as it should be, cases are constantly appearing in which there is enough suspicion on the part of the doctor to take a Wassermann. These cases, if the Wassermann is positive, should immediately have Salvarsan, following which the type of work at which they are placed should be carefully investigated. We have found a number of these cases in which the mental degeneration was considerable, rendering the man a danger to himself and others. He will, however, often clear up rapidly after medication and is able to resume first light work and then his original occupation.

SPECIAL—There are naturally a number of conditions which do not fall in any of the above groups, but which, nevertheless, require careful placing. These are too numerous even to mention, but will readily occur to any industrial physician. A typical example would be varicose ulcers of the leg. These cases may be placed at moderately light work, and with protection do extremely well, the ulcer healing up rapidly under daily cleansing at the hospital and proper support. Flat foot is another condition in which combination of placing and support gives excellent results. Our own experience goes to show that flat foot is more of a bugbear than a real detriment to good work.

GENERAL—There are always a number of cases which present a combination of conditions which can only be cited as general. Many of these cases fall under class four group, and really have no business to work anywhere in the factory. Others may be placed and a moderate amount of good work obtained from them. Proper placement does not finish the doctor's responsibility. These sub-standard men must be examined from time to time to see that their defects are not increasing and that the placing has been proper. Such an examination should be made as a routine twice a year, and at each examination a record should be made showing the patient's condition, while the doctor should give enough time to be able to discuss with the patient his findings at this examination, and give the man advice as to how to maintain himself in good condition. If the patient has confidence in the doctor and medical service, and has been thoroughly explained the symptoms which mean beginning trouble, he will present himself to the doctor for examination long before there are any real signs of breaking down.

In closing, I would point out that the problem of the sub-standard worker is one which can only be solved by the industrial physician and employment manager, and then only by enthusiasm, careful work and strict co-operation.

DR. PATTERSON: I am going to ask Dr. C. M. Harpster, of Toledo, to say a word to us, for I am sure we would all be enlightened and benefited by a little talk from him. Dr. Harpster.

ADDRESS

BY DR. C. M. HARPSTER, TOLEDO, OHIO.

The program has been so varied I am going to say a few words on Dr. Fischer's paper—on frauds and malingerers and fakers and those who purposely misunderstand and misinterpret their condition. It is quite a problem when corporations are confronted with this state of affairs; when 1 to 10 per cent. are paid out in claims, a large number of which are unjust. With your kind indulgence, and with my limited experience, I will endeavor to give you a few cases and a few observations I have made on this subject.

Of course, the public utilities are confronted with the problem from many angles, and we have in many cases been misinterpreted as to the statements made. I think Dr Fischer was very accurate but I am discussing the matter from another angle.

My viewpoint is a little different from his and Dr. Mock's, for we find that 50 per cent., or one-half, of the cases presented to us for analysis are the patrons of public service corporations; interurban railways and so forth. I suppose 25 of the 50 per cent. are nothing more or less than frauds. You can analyze the subject from many angles. We have also had many cases presented diagnosed by the attending physicians as fractures of the skull, the normal depressions of the skull in these cases being classified as fractures.

Also, I have known of many cases diagnosed as floating kidneys. One of our ablest neurologists in his excellent text book specifically states that he has never seen a case of floating kidney due to trauma. But where it does occur he states, "The shock must be profound; the renal vein must be torn, the pelvis of the kidney itself dislodged."

And then goiters. I never in my experience have been able to put my fingers on a case due to trauma. Hernia I will not go into at all. I have had a number of cases lately of men suffering with rheumatism, articular or inflammatory, and in many cases claims for injuries have been filed. Our most unique experience I can put my hands on.

Certain doctors and certain lawyers have certain definite conditions that they diagnose for their patients. Our physiology says, "A puncture of the floor of the fourth ventricle produces diabetes." One doctor in the case of head injuries reasoned that diabetes was produced because of this head injury. In his last case however, in which we made a settlement of several thousand dollars, we were able to follow out this individual, and we finally got a statement that in making the examination the doctor had injected something in her arm which produced the sugar in the urine. Phloridzin no doubt was used. Blood in the urine is produced by antipyrine.

Of course, you know the emotions play an important part in our make up, and doctors often call this traumatic neurasthenia. Your chairman has asked me to present this subject and I will only detain you a short time. This nightmare is comparable to that ancient monstrosity that Erichson dubbed, "the railway spine." The term neurasthenia has made fortunes for numerous members of the legal profession. The prognosis of "legal neurosis," or the "litigation neurosis," often varies inversely from the time of settlement of the individual's claim for damages. Most cases recover spontaneously as soon as the money for damages has been paid over. In hundreds of cases so-called traumatic neurasthenia none of the persons traced failed eventually to resume his ordinary vocation after a satisfactory settlement of the claim.

After a complete revision of the symptoms of hysteria and neurasthenia, Babinski showed that most of the symptoms are due to medical, legal, or other suggestions. Society people willingly and cheerfully dub themselves neurasthenic although wealthy society ladies never have the traumatic form of the condition. The term is also employed to cover diseases the patient is not anxious to make public, such as certain psychopathies. Doctors themselves have contributed in no small measure to popularize the condition and the use of this term by the public. As Dejerine and Gauckler remark, physicians tax their patients with neurasthenia and then tell them that their troubles are nervous. Beard and Charcot imagined that they were describing a definite disease.

As a matter of fact, the malady is characterized by well-marked symptoms. Neurasthenic headache, digestive disturbances, rachialgia, amyosthenia, insomnia, etc., constitute the most distinctive features. Along with these are found many secondary symptoms. A distinct, morbid entity could be extracted from this group of manifestations. The majority of the symptoms are emotive phenomena. Even neurasthenia itself tends to become blurred and, according to Beard and Charcot, out of 300 patients examined and declared to be neurasthenic, not one presented the signs formerly attributed to this neurosis.

In the neurasthenic subject, fatigue, depression, fatigability are characteristic, but these are wholly inadequate of themselves to create a morbid entity which, moreover, possesses no anatomical features of its own. Almost nothing specific is found in the etiological conditions, nor is it possible under the conditions to give any pathologic definition.

According to Dejerine, neurasthenia is little more or less than a polyvalent syndrome. As a rule, when the doctor says neurasthenia, he has in mind certain unexplained but not necessarily in-explicable troubles. It often happens, indeed, that on following up the study of the neurasthenic symptoms, they are found to be connected with some morbid process in evolution, or to a lesion of some kind. Professor Legueu recently showed this to be the case in respect to certain ill-defined urinary disturbances described as neuropathic or neurasthenic.

If given a case of neurasthenia, each manifastation is taken separately and its etiology and development investigated, each symptom is referable to one special pathological process not strictly speaking in the domain of neurasthenia. Dejerine and his pupil, Gauckler, have endeavored to define exactly the origin of the disease in the 300 persons they describe as neurasthenic; 103 were originally mental subjects; 121 were organic, and in 76, the affection supervened under the influence of emotive states. Suggestion is a common source of neurasthenia. The majority of their cases (121) were dependent upon ill-defined organic affections; for instance, in 3 per cent. of these patients thyroid troubles were at the root of the neurasthenia. In others malaria had been at work, or grave enteritis, tuberculosis, arteriosclerosis, etc.

A goodly group was made up of debilitated subjects, the physically unadapted, as Dejerine calls them. These subjects are healthy and their organs are intact, but they lack physical energy and break down on the least exertion. Closely allied to this category are patients who are, so to speak, wound up for some trifling part, but they are unable to stand their ground directly they are subjected to a little extra strain. The fatigue which they experience is, in them, a factor in the production of any neurasthenia. An organic affection, even if trifling and devoid of pathologic significance, will set up in the neurasthenic violent local reactions radiating out of all proportion to the producing cause. Similar lesions are not equally well borne by subjects of healthy constitutions and neuropathic temperament. For instance, two patients may be suffering in the same degree from asthenia, and extreme depression and may be unable to walk. One has a cancer of the liver, the other merely floating kidney. A young woman suffers from intense neurasthenia

with pain in the region of the heart, but careful examination reveals in her a periostitis of the fifth rib.

Emotional causes are often at the root of these neurasthenic disturbances. It is more the duration of the emotional trouble than its intensity that weighs in determining the genesis of morbid phenomena. These patients might be labeled "moral unadaptables," they display such a disproportion between their mode of life and their constitutional aptitudes.

No one would venture to advocate that these various categories can be included in the same morbid group, and neurasthenia must be regarded in a very different manner. It may possibly retain its place in neurology, but its field must be limited and certain eliminations must be established. To begin with, all asthenics are not neurasthenics. Those who present troubles of thyroid or suprarenal origin are only accidental neurasthenics. Hepatic subjects must also be eliminated as well as the debilitated, and those suffering from melancholia, hypochondria, or psychasthenia.

Speaking generally, emotion is accorded a much too modest influence in works on pathology, yet it is universally admitted that emotions may cause functional disturbances throughout the economy. The functions of nutrition are under the immediate control of the functions of relation, and those are comprised in the much more general function of adaptation and this is disturbed by the emotions in a more or less durable or fugitive manner.

The neurasthenic state is nothing more than the totality of the constitutional or particular disturbances resulting from the emotional state acting on a given soil, and the various mechanisms by which a patient is rendered neurasthenic, act as simple emotional causes. The inability to adjust the mechanism to an intense emotion, whatever the cause, represents an intrinsic inferiority and the consequent symptoms of depression, fatigue and exhaustion may be summed up as naurasthenia.

Mental, organic, or emotional causes may induce the condition, the last named preponderating. That all organic causes do not have this result is due to the fact that they often occur in ill adapted subjects and manifest themselves only on definite neuropathic soils. Our conception of neurasthenia should be limited to the totality of the disturbances which arise from the permanent action of emotional states.

From the records of our own companies one case may be cited to show how the condition may be abused: A woman, 38 years of age, of emotional nature and disposition accidentally fell from the step of a motionless street car. She was immediately taken to the hospital where thorough examination failed to reveal any signs of physical or organic lesion. She threw herself into muscular contractions and fits. There was anesthesia of the skin in places, hyperesthesia in others, and there were functional disturbances too numerous to mention. She left the hospital, after several days, dissatisfied with the treatment she received in the hospital, with her nurse, her bed, her diet, her physician. She went to bed at home and on the suggestion of friends and lawyers stayed there for months. Trial of her case defeated her claims. No appeal was made. Immediate recovery followed, the case being one of hysterical and emotional neurosis—neurasthenia, if you please—with the gold-releasing word, traumatic, superimposed.

DR. PATTERSON: Now, having finished the set program of this morning it is my thought that we have only just started, and I am going to ask first of all, a man at the head of our Bureau of Rehabilitation to give you an idea of what Pennsylvania has done since the Bureau was organized last year by our legislature.

The other night, in the course of our Safety Congress, here, our Governor stepped on the platform and expressed to the large audience how heartily he was back of the plan to protect the men or women from the scrap heap and put them back to productive labor and so it is a pleasure for me to introduce you to Mr. Riddle, Chief of the Bureau of Rehabilitation, who will tell you what we have so far accomplished and what he will do for the future. Mr. Riddle.

THE BUREAU OF REHABILITATION.

BY S. S. RIDDLE, CHIEF.

The Bureau of Rehabilitation was created as an additional branch of the Pennsylvania Department of Labor and Industry by the State legislature, in session of 1919. Governor Sproul was instrumental in having this piece of humanitarian legislation enacted, which, in effect, supplements the workmen's compensation system.

The theory of the Pennsylvania rehabilitation program is to render workers, disabled in industrial and agricultural pursuits, and handicapped so that they cannot perform their former work, capable of earning a living at tasks they can perform without undue injury or health hazard; where advancement is possible; where competition with great numbers of other handicaps will not exist; where their disabilities will not render them likely to lose their employment in the event of a great supply of able-bodied labor; and preferably at tasks for which they have a natural aptitude or prior experience to reinforce training for the work in which they are placed.

The legislature of 1919 appropriated $100,000 to start the work of the Bureau of Rehabilitation. The bureau, under the law, can aid any resident of the Commonwealth of Pennsylvania whose capacity to earn a living is in any way impaired or destroyed through industrial accident occurring in the Commonwealth. The bureau is to render such physically handicapped persons fit to engage in renumerative occupations.

The Bureau cannot aid aged or helpless persons requiring permanent custodial care, blind, or deaf persons under the care of any state or semi-state institution, any epileptic, feeble-minded person or any person not susceptible to rehabilitation.

Limitations are thus set for the Bureau of Rehabilitation because it is not a charitable or pensioning bureau, but a helpful economic activity to place the disabled victims of accident back into employment they can perform. The bureau can aid workers who have suffered amputations in the purchase of artificial arms and legs, as means to render them more fit to re-enter industrial activity. For the same purpose, the bureau can provide maintenance costs, not in excess of $15.00 a week for a period of twenty weeks, to a disabled person, when a school course, or industrial training course is necessary to fit them for proper work.

The activities of the Bureau of Rehabilitation are not medical or surgical. The bureau takes charge of a man after physicians and surgeons have restored him to his highest possible physical efficiency. Co-operation of physicians and surgeons with the Bureau of Rehabilitation is, however, absolutely essential if the Bureau is to be successful. In many cases information must be obtained from physicians, surgeons, and hospitals regarding the physical condition of a disabled worker, who desires to enter employment or a training course. Later developments may be establishment of clinics by physicians and surgeons at various points in Pennsylvania to consider methods of functional restoration and general physical rehabilitation of disabled industrial workers. The great war centered attention upon the absolute necessity of reclaiming for useful effort disabled men. It is a natural sequence that this would be extended to include the thousand of workers disabled annually through industrial accidents in Pennsylvania. The co-operation of physicians and surgeons in this work is earnestly sought.

DR. PATTERSON: We still have a few minutes more and the subject is open to the floor for general discussion.

MR. COLCORD: Carnegie Steel Company.

I think we owe a great deal to Dr. Mock for systematizing this great work of rehabilitation. We all should be with him heart and soul, and the State in its efforts to help us.

There is one question not brought out, and that is the work each one of us can do in our field to get the injured cripple back to his position. What are you and I doing to help in this work? Do you ever feel that we should turn all of our permanently disabled over to the state to educate? Can we not train most of them in our own plants if we only think so? We may divide these cases into three groups:

1. Those we cannot educate in our own plants; these we must turn over to the State organization.

2. Those whom we can train but not for their old jobs. Their disability is so great that we must select some other work—that to which they are best fitted, and teach them to do it.

3. Those who can still be taught to do their regular work.

The question of getting a badly injured man back to work is largely one of psychology. The shock of the injury followed by that of the operation in the general hospital; the period of pain and danger; the following weeks or months of enforced idleness in the hospital produced a frame of mine which Dr. Mock has well named "hospitalization."

The man comes back to the works surgeon changed, not only physically but mentally. His whole attitude toward work and his place in society has changed. If he has now some insurance or lodge benefits besides his compensation there is an added motive for idleness. We may call this the stage of "loaferization." The habit of loafing is a pernicious one and like the morphine habit, fastens itself more strongly on its victim as time goes on.

The more confirmed cases drag through the period of compensation, more and more loath to return to any kind of work. At the end of compensation, with funds exhausted they reach the final stage in their downward career—that of "panperization." We now find them selling lead pencils or shoe-strings or doing just plain begging. It is our duty, even our privilege to save these unfortunates from such a fate—to reclaim them while there is yet time and make them useful members of society.

The treatment is largely one of suggestion. It muse be begun as soon as the man is injured and kept up during his stay in the hospital. We must create in him the desire to get back to work at the earliest possible moment. When he returns to us from the hospital is a ertical moment. When we welcome him back we can begin unfolding our plans for his "limbering up" exercises followed by a period of occupational training. He must be taught to look forward to it—to desire it. His mind must be filled with horror at a life of idleness and beggary. He must be shown what others with similar cripplings have been able to do.

In our work at the Clairton mills the matter of each case is taken up early with the department superintendent, and a place found to fit the man. Many of those cases are not those of permanent but of prolonged disability, but most of them tend to go on indefinitely unless handled with tact. I try to make the man see that his first few weeks of light work is in important part of his treatment.

The large employers of labor in Pennsylvania must be aroused to the importance of this work, and most corporations will readily do all in their power along the line of rehabilitation if its importance is placed before them in its true light.

DR. PATTERSON: It is now one o'clock. The meeting is adjourned.

THURSDAY, MARCH 25.

AFTERNOON SESSION.

CHAIRMAN: DR. FRANCIS D. PATTERSON.

DR. PATTERSON: The meeting will kindly come to order. I am sure it needs no words of mine to emphasize to this meeting the seriousness of the influenza epidemic which swept this country two years ago. I am sure there is no physician who had a wider experience, not only in treating every phase of this disease, but in observing the sequellae, than Dr. Alfred Stengel, of the University of Pennsylvania, who is well known at least by reputation by all who have the privilege of being present.

This Department can never cease to be grateful for the co-operation and help which we are ever receiving from Dr. Stengel, and it gives me very great pleasure to present him to you.

INFLUENZA.

BY DR. ALFRED STENGEL, PROFESSOR OF MEDICINE, UNIVERSITY OF PENNSYLVANIA, PHILADELPHIA, PA.

Ladies and Gentlemen: I do not know what the acoustics of this hall are, and if I am not heard in the back of the room I would be glad to have you tell me. Please do not think that I wish to intimate that my voice is a feeble member.

A discussion of influenza in this place will be of special interest in so far as it presents matter pertaining to the endemicity, epidermicity, and prevention of the disease. The recent panoemic has been so excessive in its proportions and violence that no extended comment is needed to emphasize the economic aspects of the question. A disease that can within a year wipe out 500,000 lives in the United States alone, and probably 10 or 12 millions in the whold world, so greatly exceeds every other disease in its potentiality for evil that its merits, nay requires, the earnest and organized efforts of all agencies that may be brought into play to devise means of checking its progress at time of reappearance and of controlling it during established out-breaks.

1. That the influenza of 1918 is the same disease many of us had the opportunity of studying in 1889 and '90 and that is recorded in the medical literature as having occurred from time to time at intervals of from 10 or 15 to 30 or 100 years, is so certain that I shall not take time to discuss it. The earlier, and viewed from the standpoint of modern methods of observation, somewhat inadequate descriptions of early epidemics like those of Rush, Webster and Drake in this country and many others in foreign lands, present such suggestive hints of resemblence to what we have observed that we are forced to recognize the identity of these outbreaks with the recent ones we have observed. A few of the common features of several of the pandemics of which we have knowledge are particularly important and should be mentioned.

First, it seems to have the constant characteristics of the disease that it began its pandemic course some time during the early or middle part of summer in Western or Central Asia and moving westward reached Eastern and the Western Europe during the autumn and the Western Hemisphere a month or two later.

Second, after the subsidence of the initial outbreak which has usually occupied a period of from four to eight weeks, the epidemic rapidly subsides, so far as incidence of new cases is concerned, but return waves of lesser extent and violence appear during succeeding months, usually well into spring and summer, while numerous residues in the form of pulmonary, pleural, cardio-vascular and nervous sequels raise the sum total of morbidity above the normal figures for some time after the epidemic has wholly subsided. (See Hinsdale—"Osler Anniversary Contributing").

Third, secondary disseminated but often extensive epidemics sometimes constituting actual pandemics, almost always reappear during the next few years. These as a rule occur somewhat later in the year (sometimes not until the late winter months) than the first outbreak; and are usually relatively mild when the original epidemic was virulent and on the contrary severe in localities where the first outbreak was mild. This last statement applies to the influenza in Great Britain in 1891 and perhaps to that in New York City during this year.

Fourth, the high degree of virulence with rapid death in the earlier period of the epidemic contrasts sharply with the milder and more prolonged type of the disease and the occurrence of complications, such as bronchiecuasis, empyema, and cardiac disorders characteristics of the waning stages. In this particular, influenza differs strikingly from cholera in which the early cases are so commonly mild and a typical that the euphemistic term cholerine was formerly applied, and possible from other types of intestinal onfection-typhoid, dysentery, etc. On the other hand influenza in this particular resembles epidemics of pneumonia.

Fifth, after every extensive outbreak of influenza there has been an apparent increase in the incidence of pulmonary tuberculosis, a fact which has not until recently been generally appreciated, that a positive diagnosis is often impossible without careful bacteriologic examinations of the sputum or until sufficient time has elapsed to determine the issue by the clinical course. An added difficulty has of late arisen by reason of the fact that many X-ray specialists who have had no experience in the study of post-influenzal cases have been misled by the mottled shadowing of the lungs in this condition. Unfortunately for this method of diagnosis, the post influenzal lesions, peri-bronchial infiltration and fibrosis, bronchiectasis, etc. are frequently most marked at the apices of wholly confined to these portions of the lungs.

I have, at a previous conference of this body, called attention to this confusing resemblence of influenzal residues and tuberculoses, but am so impressed with its importance that I have not hesitated to refer to it again.

II. Granted that the pandemics of influenza of the past and of the last two years are the same, the next question of importance is consideration of the nature of the emdemic cases or outbreaks of catarrhal infections that have so commonly appeared in intervening years. To these cases various names have been applied, such as catarrhal fever, pseudo-influenza, influenza notha, epidemci colds and grip. Drake says that in the interior valley of the United States the term influenza has been given to these recurring outbreaks of fall and winter "colds," but that they were manifestly different from the great pandemic which he observed and recorded and which was indentified as true influenza.

Those of us who saw the epidemic of 1889 will recall the name of LaGrippe was introduced into common medical parlance after it was recognized as the older French equivalent of influenza, and how during the succeeding years, physicians, recognizing the fading out of the characteristics of the real disease in successive outbreaks, in somewhat colloquial parlance adopted the term grippal infection, grippy attack and grip. Subconciously, we all felt that though the outbreaks of 1889-90 and '91, were undoubtedly genuine pandemic influenza, the later epidemic were either greatly mitigated forms of the disease or infections of other sorts. The lack of a

positive bacteriologic or serologic criterion makes the solution of this problem impossible and expression of opinion will after all remain opinion only.

The best answer that can be given must be that which is based upon the known facts of the epidemicity and pandemicity of influenza. The residual cases occur in the places where the disease has appeared in violent form and occasion secondary outbreaks a year or two years later of course strongly suggests the possibility of more prolonged endemicity.

A further evidence of this is found in the fact that certain peculiar conditions, usually closely related, if not due wholly to influenzal infection, have been encountered several years after the last pandemic. Thus, for example, I have seen a few cases of sudden violent pulmonary infection followed by extensive wide-spread bronchiectasis (suggesting influenza) and one or two of typical lethargic encephalitis, in the last 15 years and several years after the former and before the last outbreak. I purposely refrain from making any point of the discovery of Pfeiffer's bacillus in certain recent outbreaks, but do wish to emphasize as a highly suggestive fact the the discovery in abundance of Pfeiffer's bacillus in sputum cultures has been especially common in cases of bronchiectasis, a condition admitted by all as a more common sequal of influenza than of any other form of pulmonary infection.

While my own opinion, therefore, is that influenza remains endemic after great pandemics, I believe it gradually declines in virulence and perhaps disappears because the evidence is unmistakable that practically all pandemic recurrences have started from Asia and have travelled westward, while American return waves during the year or two following a great pandemic (when I assume the virulence of the disease has not yet subsided) have been found to start in this country and have extended eastward, westward or in various directions.

There remains for discussion the group of catarrhal "colds" usually occurring in the late fall, the winter or early spring, which we have been in the habit of calling grippy colds and grip. Some of these may undoubtedly be instances of mitigated influenza, but many no doubt are other forms of infection, such as those caused by streptococcis, pneumoccis, the micrococcus catarrhalis, etc. The clinical history and sequel to these infectious differ somewhat from even the milder types of true influenza seen in the midst of a pandemic and differ essentially from the severe cases; but I shall not pretend that an absolute diagnosis is always possible.

III. The outbreaks of influenza present a certain sameness in their mode of origin, extension and subsidence, that may be of value in showing how we may make successful efforts at their limitation and control. Usually the first extensive morbidity has occurred in institutions, barracks, camps, large industrial or mercantile plants and the like, following which the community in general has been attacked. This was instanced in 1889 by the reported occurrence of the disease, first, among the employees of the Magazin du Louvre in Paris, various barracks in Russia and Germany, and in certain industrial institutions, like those at Fall River in this country; and in 1918 by the prompt appearance at the naval stations, in Boston and Philadelphia, in this country.

In each of these cases the epidemic did not reach the community generally until from one to three weeks later. I am well aware of the fact that in 1889 certain individuals claimed that cases occurred in the community a month or six weeks before the epidemic was evident and that a similar claim was made in 1918. The answer to this is that these early, unsuspected cases were all typical and doubtful.

A second fact in the epidemic occurrence of the disease that has been widely noted but too little emphasized as of general importance, is that fatigue and in fall and winter epidemics exposure to dampness and cold are important factors in laying the foundation for the infection. The earliest and most serious attack has been among those exhausted by work, privations and unfavorable surroundings and especially those who in addition have been unduly exposed to cold. These are circum-

stances in which all acute respiratory infections apparently most readily occur and should not be lost sight of by military staffs whom may have to deal with large bodies of young men undergoing preliminary training in strange and not usually the most wholesome surroundings.

IV. Methods of Control. Two general subdivisions of this heading may be separately discussed: (1) isolation, quarantine and other hygienic regulations, and, (2) Preventive methods of treatment.

(1) The fact that the disease is known to spread rapidly among these in close association indicates the end to which one useful form of regulation may be directed. It is manifest, however, that attempts to prevent all forms of crowding or close association must speedily break down in the case of an epidemic of the proportions influenza is likely to assume and as a matter of fact the measurers taken in certain places in 1918 proved the uselessness of this method as applied to whole communities.

It cannot be doubted that strict measures of quarantine may serve to prevent the outbreak among isolated communities or in institutions that can be closed to all external contact. This has been demonstrated by the fact that during large pandemics' occurrence, inhabitants of certain islands lying close to affected countries, but lacking all communication with them by incoming ships, have wholly escaped the disease; and has been shown directly by Betchod and Minkine (Rev. med. de la Suisse rom., 1918, vol. XXXVIII. pp. 625-634) in the case of isolated sanatoria. Less certainly, the extent of the disease has been limited in the case of some of our army camps during the recent epidemic, where prompt and rigid methods of quarantine were instituted.

It seems evident, therefore that on the outbreak of an epidemic, considerable restriction in its extent may be affected in industrial plants by the early inspection of all workmen, and by excluding from all association with the others those presenting suspicious evidence of the disease. Unfortunately, contagion seems to be particularly marked in the very beginning of the epidemic, and nothing but the most rigid inspection would probably avail to prevent the spread of the disease by this method of quarantine.

Isolation of those manifesting the disease is, of course, highly desirable, but quite outside the realm of the industrial physician, and rarely possible to the extent that would make a distinct impression on an epidemic throughout the community.

GENERAL HYGIENIC REGULATIONS—If it be true, as has been frequently suggested, that fatigue and exposure are important predisposing factors in the development of the disease, and that those whose mode of life and habits permit of adequate rest and the most satisfactory hygienic conditions generally have the best chance to escape infection, it would seem to follow that some regulations in the matter of hours and conditions of work might make a distinct impression on the epidemic and limit its ravages. The suggestion has sometimes been made that factories, particularly those in which workmen are closely crowded, should be shut down. Unfortunately, this would lead to a more rapid spread of the disease elsewhere by closer crowding at home; just as the closing of school and the shutting up of places of public recreation may do. A more reasonable plan would be the introduction of longer rest periods during the working day, with provision that the workmen should enjoy both rest and fresh air during their cessation from work.

Regarding the matter of exposure, simply instructions to the public issued at times of epidemics, concerning the danger of exposure to wet and cold, particularly on the part of those who are fatigued, may accomplish some useful results.

RELATION OF ALCOHOL TO EPIDEMIC INFLUENZA. This is a subject of peculiar importance. During the recent outbreak much public discussion was given to this matter and physicians were sometimes quoted as believing that the moderate

use of alcohol might serve as a protective against influenza. Whatever we may conclude as to the value of alcohol as a therapeutic agent in the treatment of influenza pneumonia, and similar diseases, (and I wish to record myself as one of those who are still impressed with the value of this drug in selected cases, when used under distinct medical advice), there can be little doubt of the harmfulness of alcoholic indulgence on the part of the public as a means of prevention. The so-called moderate use is rarely moderate in a strict sense, and the taking of even moderate amounts by those unaccustomed, and of immoderate amounts by those accustomed to its use, is capable of producing susceptibility, rather than the reverse. Physicians should be extremely cautious how they permit themselves to be drawn into any expression of approval of the general employment of alcohol as a preventive of disease.

MASKS. Face masks were extensively used during the recent epidemic in hospitals and various closed institutions, and in some localities were required as a matter of public regulation, to be worn on the streets or in any public places. It is evident that a distinct benefit might accrue from the use of masks worn by the patients themselves, since it is to prevent the dissemination of infective material from the mouths and throats of such patients that they are employed; but the hardship entailed on the patients, particularly those critically ill, has operated to prevent this mode of application. The wearing of masks by those unaffected, but of necessity, coming in contact with the persons ill with the disease, is of more doubtful value. In the first place it is clear, from a number of investigations, that such masks as have been commonly employed have been constructed of materials too porous to serve as effective filter, while these of suitable character have been so irksome that their use has been restricted.

Moreover, care with regard to the disposition of the masks after exposure has never been sufficiently rigid. If they are to be of any value, it should be insisted that they be constructed of close-meshed material, such as butter-cloth, and that three or four layers of this be used in their construction; that the masks shall immediately after removal be placed in boiling water or in some antiseptic solution and that a fresh mask shall be used upon returning to the sick room. Employed in this way, masks may undoubtedly be a distinct benefit, and where possible, the wearing of a mask less perfect in its construction but on that account more tolerable by the patient himself may serve some useful purpose.

(2) ANTISEPTIC SPRAYS. The possibility of preventing influenzal infection by the systematic use of sprays, gargles, nasal douches, etc., has been frequently discussed; and as opinion is very general that the infection gains access through the respiratory system and would, in all probability, be favored by unhealthy conditions of the upper respiratory tract, such measures of prevention would seem to be justified particularly in view of their simplicity and harmlessness. Some attempts have been made in army camps to test in a systematic manner the value of such methods, as well as in some industrial organizations, but I am unable to quote definite references or figures. I am, however, informed by Colonel Edward Martin that the results obtained at Camp Greenleaf seemed to indicate some protective value.

INOCULATION FOR PREVENTION OF INFLUENZA. A great deal of literature bearing on this matter has accumulated during and since the recent epidemic, but the opinions of writers differs widely. Unfortunately, many of those who have discussed the question have failed to indicate clearly the distinction between preventive inoculation and the injection of vaccines for curative purposes, or have so confused their statements that it is difficult to determine the merits of

their observations. The uncertainty as to the cause of influenza, of necessity, adds greatly to the difficulty in arriving at any conclusion, and the conflicting claims in favor of various combinations of organisms add still further to the uncertainty. If Pfeiffer's organism is the true cause of influenza, it might, of course, be expected that preventive inoculation prior to infection might have a value comparable to that of inoculation against typhoid infection; although the practical use of influenza vaccines would involve much greater difficulties than that of typhoid vaccines on account of the fact that any immunity conferred in influenza is undoubtedly of shorter duration than in the case of typhoid.

Most of the attempts made to immunize individuals against influenza during 1918 were undertaken after the disease had made its appearance as a pandemic, and it cannot, therefore, be determined whether the inoculated person presumably healthy, had been infected at the time of inoculation or not. It is obvious that unsatisfactory results under these conditions could not fairly be regarded as having the valuelessness of protective vaccination, but it is also clear that in view of the presumable short duration of any protection from such inoculation it will always be difficult to chose a time for the vaccinations when it would be certain that the individuals had not yet acquired the infection. In any case, the results published in this connection have been very uncertain, and for the most part the best controlled observations show no protection whatever.

Most of the reported attempts at protective inoculation have involved the use of vaccines composed of various organisms, such as the influenza bacillus, pneumococcus, streptococcus, Friedlander's bacillus and Micrococcus catarrhalis. The reason for employing such a combination has been that sputum cultures from cases of influenza and influenzal pneumonia have uniformly shown the presence of combinations of these organisms in varying proportions, and it has been thought that complete protection might be secured by the employment of a vaccine representing all of them. It must be recognized that bronchial and pulmonary diseases of all sorts are readily complicated by secondary or mixed infection. This is as true of typical pneumonia and tuberculosis of the lungs as of influenza, and cannot properly be made the basis of an assumption that the disease is essentially a mixed infection. Much has been said regarding the possibility of some symbiotic action of different organisms in the etiology of influenza. All of this is pure assumption.

It seems reasonable to believe that there is a single primary cause of the disease, and that the mixed infection is an incident, though it may be more serious than the primary disease. The eventual form of specific protection will probably be found in the use of some method of control of the primary etiological factor, rather than in the use of any combination of secondary invaders. In the absence of definite knowledge regarding the primary cause, conclusions must be based, for the present, on the practical results achieved by the combinations that have been employed; and an extensive array of references might be cited on either side with the balance of probability, so fas as I can see, distinctly against the asserted value of vaccines. Many of the reports show a lack of any attempt at adequate control; and those which have been properly controlled have more largely shown a complete lack of any protective value.

It may be added here that the indiscriminate use of vaccines as protective measures in the midst of an influenza epidemic is not free from danger, as has been pointed out by Sahli, Meyer and others, I may add that in a limited number of cases I have seen disastrous results from the use of vaccines during the recent epidemic, one, at least of these having occurred from the use of a highly-recommended vaccine, prepared and administered by a well-known bacteriologist, whose report fails to indicate that unfortunate results ever occurred from the employment of his vaccine. In a larger number of cases I have seen less serious results in the form

of slight outbreaks of such "provoked influenzal attacks," as has been mentioned by Sahli.

The use of vaccines of pure influenza-bacillus cultures or of mixed cultures, in the treatment of influenza, is eveu more questionable, and may be dismissed without serious discussion, as it has been quite universally condemned.

DR. PATTERSON: I am sure that nobody cau ask for a better paper than Dr. Stengel has given us. The uext ou our program is a study of very vital interest to all of us, because it is esseutial that we should take stock and see if we have met our responsibilities. So, it is my pleasure to introduce to you Dr. C. E. Ford, from the General Chemical Company, who will speak to you on, "Health Education in Industry." Dr. Ford:

HEALTH EDUCATION IN INDUSTRY.

BY DR. C. E. FORD, GENERAL CHEMICAL COMPANY, NEW YORK CITY.

Mr. Chairman, Ladies and Gentlemen. In the early history of medical service in industry the employment of a physician was considered an evidence of a benevolent attitude on the part of the employer. The protection secured against excessive costs resulting from accident and injury, the shortening of the period of disability, the relation of the doctor to relief agencies and the doctor's value as an intermediary in industrial relations established more or less the value of the plant physician as a member of the operating staff. As a result of really meritorious work on the part of a few pioneers in the field, it became evident that pre-employment examinations, as well as periodic re-examinations, prolonged the usefulness of the employed both to the industry and to the individual, to his family and therefore to society, and has also resulted in the accumulation of facts that will clear up the hazy notions with respect to the hazards of certain occupations.

Probably the greatest opportunity for the promotion of the public health has arisen through the rapid development in industry of medical departments—manned as these departments should be by medical men giving their full time and thought to the conservation of human lives. In the discussion of our subject, a review of the relationship of the public health department, of the medical profession and of the public would seem, perhaps, profitable.

Public health is a field which embraces sociology, engineering, chemistry and bacteriology, as well as medicine, and the man with administrative gifts may have qualified for his post through any one of these allied sciences. The fact of a man being a competent physician does not make him a qualified health officer. Public health is a science and art in itself and peculiar to itself, the essential being that the official should have studied and practised this science and art. If he be a medical man, his position, with the present professional viewpoint, is strengthened with his profession and the public.

As Drake has well stated, a health department, in performing the functions imposed upon it by law, must reach, more or less directly, every person within its jurisdiction. The past generation has witnessed radical changes in the theory of preventative medicine. Officials are no longer permitted merely to meet emergencies as they arise. Health promotion has become more important than disease prevention, and disease prevention has come to be more regarded than disease suppression. The archaic policy of acting only in the development of emergency, of merely being ready to make the best of a bad situation in repairing damage after it has occurred, has been relegated to a less enlightened day. In carrying out its work of prevention, a health department must endeavor to arouse the interest and attention of individuals rather than of the masses or classes. It has become axiomatic that the government relation can only be as strong as the individuals who constitute it; but it must be borne in mind that public health is a matter for state and the nation—not merely individual towns or cities.

An aggressive health department employs every possible means of publicity—the public press, as well as the other agencies of which I shall speak later—in an effort to maintain a personal contact. Unfortunately public health publicity costs money and, to be obtained, must be paid for. The controllers of the public purse strings have not yet arisen to the importance of this function, and, excepting in

the few instances in which private funds are available for the promotion and support of publicity, the endeavor has failed. The success or failure of any movement for the betterment of public health depends, to a great extent, upon the attitude of the medical profession. In the main, that attitude is sympathetic and encouraging. However, there have been measures of very decided public value involving principles of social and economic worth that have been so strongly opposed that their value has been lost to the community. That canons of the medical profession provide that the first duty of the physician is to the individual whereas in preventable diseases, the first duty is to the public.

In the volumes of biologic essays prepared by Sir William Osler's fellow-physicians to celebrate his seventieth birthday, which lamentably appear rather as a memorial, the new British Ambassador presents certain reflections upon the medical profession which are as stimulating and suggestive as they are courteously phrased. More than any other of the great professions, Sir Auckland Geddes says, physicians lack "the spirit of citizenship," the willingness "to bear their share of the burden of Government." Their devotion to science and to the service of individual healing is paramount; they do not conceive of these things in their relation to the nation. "I have heard teachers in medical schools say that their whole duty to their students was to teach them to prevent disease, to treat the sick and to understand the method of science." Sir Auckland denies this, though to do so "seems to me, in my purely scientific moods, almost discreditable."

The forces which determine national progress, and with which a statesman is primarily obliged to grapple, are not recognized in any science to which the physician is trained. They are the forces of "mass emotion"—the largely blind, inarticulate and groping, yet supreme and indomitable, forces of the racial genius. Just at present these are forces with which the physician, if he could only recognize the fact, is peculiarly qualified to deal—"an emotion of human betterment, finding expression in centres for child welfare, in schemes for housing the working classes, in the establishment of Ministries of Health, of Reconstruction and Research." In brief, "we are at this moment in the power of a world-wide emotional storm, the full effects of which are not yet manifest," but which will centre in the betterment of the nation's health and of the more purely human relationships. Meantime the medical profession, "with brilliant exceptions," is composed of men who are "immature as citizens" and whose citizenship, such as it is, "is as divorced from their technical knowledge as is the citizenship of the speculative builder when he jerry-builds new slums." The world is "moving on to the greatest of its revolutions," but the majority of physicians, "who might be its far-seeing leaders," are "blind and babbling of industrial unrest."

Throughout a relatively brief but active relation with the medical profession it has been observed that the individual doctor has been so occupied with the specific case that he has all too frequently permitted others to direct the social, economic, and professional adjustments that modern progress has made necessary—this, notwithstanding that the professional interests and those of the public are identical and should be solved and applied only by a socially-minded medical leadership. The present day is intolerant of isolation from affairs. With others, the doctor must become active and not only support and direct actively but create those remedies for the ills of society with which he is or should be familiar. Unless medicine does this and makes apparent its group strength before the people, the people will all too frequently be victimized by the various cults and pseudo-medical interests that quickly grasp the importance of public control and especially with legislative and governmental interests.

Science has developed facts that have afforded remarkable opportunity to progress, but, in so doing, serious obligations have been imposed upon the doctor.

Changes in health administration have, at times, been radical, perhaps revolutionary, but no more radical and no more revolutionary than the changes that have come to our scientific thought. The modern health administration, in asking much, is likewise given much to the physician. The individualization of health work, instead of threatening the material interest of the doctor, actually benefits him in many ways. The more intimately the individual doctor becomes acquainted with the aims and purposes and underlying motives of the modern health department, the more valuable his influence becomes to the people of his community and the more useful the department becomes to him in the pursuit of his practice.

Health officials are now urging periodical physical examinations for all persons as the means of detecting insidious organic diseases in their incipient and easily curable stages, and while the medical profession may be called upon at certain times to render service gratuitous or with small direct return, in such examinations for the purpose of education and demonstration, it is true that the establishment of this excellent custom is not only likely to save or prolong the lives of thousands, but in the ultimate brings largely increased returns to the physician. The more people think health and talk health, the more generally they seek medical counsel and guidance, consequently the more generally the physician is employed. It is invariably true, whenever there are established anti-tuberculosis leagues, with their dispensaries medical nursing service, together with the educational and publicity campaigns essential to their success, those medical men specializing in tuberculosis, as well as the general practitioner, have an increased clientele among those actually suffering from tuberculosis and seeking treatment for it, as well as those who come to think seriously of their own physical condition on account of the agitation of the subject.

This is similarly true in communities in which campaigns against venereal diseases have been undertaken. In such communities the venereal specialists and general practitioners report an increased demand for this service and, of course, this means that the uniformed have not sought the advice of the advertising or itinerant quack. This well illustrates the fact that that which is best for the people of the community and that which may be over-insistently urged upon them, rebound to the material advancement of the reputable physician.

The physical examination of school children with the discovery of the enormous number of defects of the upper air passages of the ears and mouth, heretofore regarded as relatively harmless, has conferred enormous physical benefit to the community as well as to the financial state of the medical man. This same helpful attitude is maintained by the diagnostic laboratory in its relation with the medical profession. While such laboratories are maintained for the benefit of the people as a whole, the service of the laboratory is rendered almost wholly through physicians. Occasional specimens are received from laymen, but the name of the attending physician always accompanies the specimen, and a report sent to the physician, and in practically every instance it is found that such specimens are sent with the advice of the doctor.

In the case of Wassermann tests, it is doubtful if the laboratory ever received a specimen, except from a physician. This is similarly true of specimens from patients suspected to be suffering from diphtheria, typhoid and the other communicable diseases. In actual practice the laboratory is maintained wholly for the convenience of the medical man, saving the individual hours of labor and no inconsiderable outlay of money and if one may judge by the increasing demand for laboratory service, this convenience is becoming generally appreciated. On the other hand, the more generally the members of the medical profession engage in modern health activities in their own community, the more quickly they utilize the service of the staff of the several divisions of the department, the more constantly they employ the services

of the laboratory for the exact diagnoses, the greater assistance they are rendering the government in meeting its obligations to the people.

The closest possible relation should exist between the private or industrial physician and the public health official. Public health departments heretofore have been limited to their relations with individuals for the purpose of teaching personal hygiene. The industrial health department can be made the new and strong arm of the public health department in bringing about precaution in matters of health. Morbidity statistics not now available may be secured, as well as organized assistance in times of epidemic.

The demand for this sort of service by the far-seeing executive, unappreciative of the necessary qualifications of a medical director capable of undertaking the responsibility, has led many medical men, the recent graduate, the unsuccessful or moderately so, into the field of industrial medicine; but until qualified men are created by university training or long and varied experience, the cause of industrial medicine and in turn of industry itself, will not obtain the largest measure of benefit. It no longer suffices for an industrial organization of any size to employ a part-time physician who utilizes his job to pay office rent or automobile upkeep. The physician who considers accident work or casualty surgery as a mere "pot boiler" or "stop gap" for a period of financial stress will hardly prove ornamental to this profession.

To meet the present-day requirement of a medical director, service director, or however he may be characterized, it seems that the following qualifications are essential:

He should be a man of good general education, upright in bearing and demeanor, possessed of tact and judgment. He must have had a sound professional training in a college, stressing the great basic foundation of his future work, namely, anatomy, psysiology and pathology; general hospital training of not less than two years with special attention to surgery.

At least five years of general practice—in that a knowledge of man and his foibles may be acquired. During this period it is necessary that the future industrial physician should maintain a connection with the public health agencies such as the city health department with its various dispensaries, the general dispensary, and other public medical service, in order to develop the social viewpoint as well as to broaden professional skill.

The industrial physician should have a knowledge of practice, not necessarily profound, of the fundmentals of industrial relations; these are widely covered and include applied preventive medicine, medical and psychopathic medical investigation, recreation, accident prevention and the methods leading thereto.

He should have knowledge of the special problems relating to the emoployment of women and children; some knowledge of pensions and insurance, including liability, group and social; some knowledge of plant organization, which is likely to prove effective in dealing with the problems of labor.

He should have knowledge of employment methods; some notion of job analysis, physical and mental tests, to determine the fitness of applicants; knowledge of race problems, knowledge of industrial training apprenticeship, continuation schools for training in particular job; and at least some knowledge in relation to the cost of living according to local standards.

He should have knowledge of the hours of work in relation to fatigue and output; knowledge of shift systems, rest periods, regularity, absenteeism, etc. He should have at least a superficial knowledge of the security and continuity of employment in slack seasons, while convalescing from accident or disease, in case of labor-saving improvements, as well as with the advent of old age.

He should have a general knowledge of physical working conditions, safeguards, disagreeable gases and dusts; heating, lighting, ventilation, locker rooms, wash rooms, rest rooms, restaurants, hospitals, laundries, toilets, showers, plant beautification, drinking water. Of course he should be responsible for the physical examination of applicants and the periodic re-examination of employees, as well as the medical attention to families of employees when such is supplied.

He should have very definite knowledge of housing, transportation, recreational and educational facilities; the transfer and replacement of misfits, or as has been said, "fitting the square peg to the round hole."

He should be familiar with the follow-up work, especially among new employees and with the injured; the replacement of injured and crippled employees. He should have at least some knowledge of the athletic and social activities, company stores, commissaries, the type of house suitable for economic administration and housing problems generally.

He should be familiar with labor turnover and its cost; designs and data for the construction and operation of hospitals, lunch rooms, neighborhood and community houses; general education and Americanization, together with a knowledge of broad methods of raising the standard of employees' living conditions and ideals.

"And as Merideth has recently pointed out, it is time the doctor realized his concern in the human, normal as well as sick; that his ideal should be the human body always well— his shame, the human body sick. It must be realized that health, like disease, is a medical problem and that if we have a responsibility for the sick, our responsibility is never the less for the well. We, in industrial medicine, are seriously at fault in not devoting more attention to increasing knowledge of the conditions of health."

In the foregoing, I have, perhaps, wandered far afield with the object, however, of idicating that the medical man with a broad view and such knowledge, however general, will be of such great value to the organiation and every person in it as to command the highest respect, yield a constant influence, find his post seeking him, and incidentally name his own salary.

That which has made America great in industry is here faculty of bringing together energies hitherto rambling, and misdirected into a rounded concrete whole with largely amplified production. The main-spring of production or success is individual action and not state action. Success is nothing more or less than opportunity for the individual. The enlightened business man of today sees clearly that the measure of his success is almost directly in proportion to the degree of opportunity his operation creates for others. But of what value is opportunity, lacking its essential adjuvant—the individual in good health?

In the United States there are 1,500,000 people constantly sick with preventable diseases, and 8,000,000 men between the ages of 18 and 45 are physically or mentally subnormal. While most of us are born with good health, we have but a brief existence before we carry within us, or are exposed without to the agency of our destruction. From a recent report by Irving Fisher, of Yale, we are informed that there are approximately 3,000,000 persons in the United States suffering from some form of sickness, of whom 1,100,000 are in the working or productive period of life, three-fourths being actual workers who must lose at least $700 per year, which aggregate $550,000,000. The expense of medicine, medical attention, hospitals, extra food, etc., at least equals this amount. Thus we have a total cost of illness amounting to $1,100,000,000 at least one-half of which is preventable.

The sick man is a burden to the community, while the well man is an asset. Out of every hundred who are 25 years old today, 36 will be dead at 65, 53 dependent upon relatives and charity, 6 self-supporting and only 5 well off. It has been shown that of families dependent upon charity, 77 per cent. of the members were physically unfit.

A most effective method of reaching the employee and his family is through the house organ, which, if well edited, is a welcome visitor to the domestic circle of each employee. It is well, of course, that the printed column should be supplemented by presentations by the medical staff of the organization, who should reach groups of employees orally or directly, as opportunity may offer, by means of the stereopticon or the motion picture. It has been my practice in lecturing to groups of employees and their families to discuss industrial medicine in accordance with the following scheme, closing the course by discussing problems and hazards peculiar to our own industry.

PHYSICAL EXAMINATIONS. Their immediate and remote value are considered by likening the human body to some well-known machine or device in the plant and demonstrating the analogy between the worn out and exhausted parts and the organs of the human body, emphasizing the vital importance of maintenance and repair. This method can be readily applied to such organs as the kidneys, lungs, liver, circulatory apparatus, etc. The acute and chronic infections, whether of industrial or general origin, and their importance are pointed out.

The subject of personal hygiene is simply presented, utilizing the diseases or defects that have come to recent attention in the plant as a basis for illustration.

The subject of sanitation is presented systematically by following the plan of organization of modern health departments and their various divisions; for instance, the department of sanitation. The discussion includes the nuisances; sewerage and sewage disposal; garbage, its collection and disposal; domestic animals, flies, mosquitos, etc., together with the importance of good housing and the effects of bad housing and lodging houses. The spot maps made by health departments indicating the highest tubercular rate, the highest communicable disease rates (excepting perhaps typhoid fever), the greatest juvenile delinquency, crime, drunkenness, and so on through the entire category of social ills, match exactly the spot maps indicating the greatest housing congestion.

Some years ago the Department of Health, of Cleveland, through Miss Cadsey, made a study of two districts, one being in the old crowded section of the city and the other in an outlying section, Newburgh way, which is composed largely of employees of the steel mills. Rents were practically the same. In the first district in 1907 to 1914, there were 980 cases of tuberculosis recorded, 52 per 1,000 of population. In the second there were 450 cases, or 28 per 1,000 of population. In the first district in 1912 there were 665 of communicable diseases, or 3 per 1,000. In the second, 286 cases, or 1.29 per 1,000 of population. From the foregoing, little computation is required to fix definitely in dollars and cents the higher value of life in the uncongested section.

It must be borne in mind that a house is not a mere place for shelter. It must provide that which will promote efficiency in labor and strength of character and citizenship. The house connotes the family; the family and not the individual is the unit of our civic structure. It should not be forgotten that any consideration of the employee that omits the family is largely wasted effort. It is now well recognized that in the modern factory, at least, the employee is in a better environment than in his own home. It seems the height of folly for industry to expend many times the per capita cost of health administration on the maintenance of healthful surroundings in the factory and permit the ostensible beneficiary to return to a home environment carrying the elements potent with destruction to the individual worker, his children and posterity.

Under the head of communicable diseases, prevention, treatment and a simple discussion of antitoxins, vaccines, their manufacture and use, the length and importance of quarantine, etc., are considered. Venereal infections and their effects, heretofore shrouded in mystery and crime and not discussed with candor and in-

telligence, are discussed freely, as they have now come to be recognized as the most important of communicable diseases. This subject always enlists and holds the attention of an audience. It is amazing that the average individual knows so little or nothing of the remote effects of venereal infection.

Tuberculosis presents a wide and interesting field. Its relation to housing, overcrowding, food, hours of labor, fatigue, rest, sleep, etc., are pointed out.

In connection with child hygiene, in addition to the child itself pre-natal care, reference to obstetrics, obstetrical procedure and infant feeding are discussed. The value of the medical examination of children is emphasized. Industrial hygiene is intimately related to child hygiene, yet when children leave school and enter active life the health authorities lose sight of them. Industrial hygiene is an important feature in public health work and it is plainly the duty of some authority to supervise these young men and women during the early period of their industrial activity.

Under the heading of food and dairy inspection, the production, cooling, handling, shipping, storage and delivery of milk, together with the food value, the importance of bovine tuberculosis, the dangers of the unsanitary market, and the handling of food in the home are referred to. In connection with vital statistics, birth registration and its importance invariably attract attention.

The laboratory affords opportunity for simple discussion of culture taking an examination of diphtheria, typhoid, gonorrhea, syphilis, etc. These subjects always enlist the closest attention of an audience. A description of the examination of water and its importance is also interesting.

These and other health department activities, presented even with haste, hold the attention of an audience for half to three-quarters of an hour and bring forth questions indicating not a little grasp of the subjects discussed.

Supplementing the lectures, it is advisable to offer a motion picture show. Stereopticon and motion pictures appeal to shop employees and their families and large and appreciative audiences are readily obtained either in the shop or at meetings under the management of employees' associations which now exist among larger industries. Films are available from many sources. Our government, in cooperation with other governments, together with educational and industrial institutions, maintains at Washington a Bureau of Commercial Economics, which has a large series of films on most of the subjects of personal and public welfare.

The various state and municipal health departments and practically all of the state and national organizations for promoting health have series of pictures presenting strongly dramatic appeals on the subjects having their attention. The American Child Hygiene Association, the Social Hygiene Association, the National Tuberculosis Association, the American Medical Association, the National Housing Association, and others supply for a very modest cost sufficient material for a season of bi-weekly or monthly lectures.

A satisfactory series of lectures by the works' physician is difficult for the reason that most of our present-day industrial surgeons in small plants are part-time employees having neither the disposition, qualifications nor time to discuss community problems. Unfortunately again, the physician is trained to individualism, seeing only the case and not viewing disease in its community aspect. His services are usually limited to advice to individual patients, and, if interested and conscientious, this service is of course valuable and to him is due the highest credit for the discharge of this responsibility. That there is an opportunity for the industrial physician to make a great contribution to the advancement of public health cannot be gainsaid. The work is clearly desirable, but at what cost and how shall it be brought about?

In 1916, the National Industrial Conference Board surveyed 99 leading industries in an endeavor to ascertain the cost of health supervision in industry. It was

disclosed that the cost incident to the care of 495,544 employees was $1,238,485, or $2.50 per capita. The budget of the New York Health Department is $3,957,202.15, or in round figures, $4,000,000. The population according to the Bureau of Census, July 1, 1918, is $5,872,143, or roundly, 6,000,000. Hence it is that the per capita expenditure is about 67 cents. The population of Cleveland in the same year was 810,306 and its Health Department expenditure slightly less than $250,000, or somewhat over 30 cents per capita. This lack of expenditure does not include, however, the maintenance of hospitals. If industry sees its way clear to make an outlay of $2.50 per employee, surely it is possible for the community to make a somewhat larger output and obtain returns wholly out of proportion to the sum expended by industry and that from the public funds.

It is clear, therefore, that there is an overlapping of effort with not inconsiderable waste of money. Experience has shown that there are three stages to the development of social movements, or economic reforms: a period of agitation, a period of organization, and a period of final incorporation of the desired order of things. It is obviously the time for beginning an agitation having for its object the centralization of Public health education and control in some centralized governmental authority. Industry is promoting the movement unconsciously, however. It is unfortunate that the present scope of function of the United States Public Health Service could not include the adminisration of compensation funds and other forms of social insurance likely to eventuate, which, in accord with the claims of their advocates will react to the prevention of disease.

It is perhaps more courageous than discreet to suggest that business in its present attitude toward government control, complete or partial, of social or economic function, pool its interest in a small group of the community with that of the community as a whole. Nevertheless, with the advantage demonstrated, executives are quick to respond to the demands of the period. It would seem entirely feasible to consolidate the function of compensation commissions with that of national, state or municipal departments of health, or, if the principle of states' right interferes, it would be workable to bring about co-operation between the agencies, with the point of contact resting upon the state department, to the end that their respective functions be applied to a single or at least to correlated effort which would make its impress on the whole community in the better understanding of the purpose and value of preventive medicine.

DR. PATTERSON: We surely are indebted to Dr. Ford for this very interesting report of conditions. I may state frankly that I myself had a very selfish object when I asked our next speaker to come and address us. One of the questions that is constantly confronting us is regarding plant dispensaries and their equipment, and Dr. Selby has had the opportunity to make a survey throughout the United States of plant dispensaries and their proper equipment. I am anxious to know just what dispensary is best suited in such and such an industry, and I am sure all of you who operate dispensaries will be very glad to hear from such an authority. I take pleasure in presenting Dr. Selby.

PLANT DISPENSARIES AND THEIR EQUIPMENT.

BY DR. C. D. SELBY, CONSULTING INDUSTRIAL PHYSICIAN, TOLEDO, OHIO.

Mr. Chairman. Ladies and Gentlemen: To me, an ordinary citizen of an adjoining State, to be asked to make an address to this audience is indeed an honor, because I am to bring a tribute to the great Commonwealth of Pennsylvania— a tribute in which I recognize its Department of Labor and Industry. I know of no State in the Union that has such competent people to handle its affairs, I know of no such Commissioner as our Chairman. He is without peer, and it is a great honor for me to address you all to-day.

During the war, I took particular interest in the medical departments and dispensaries at the different cantonments and when I started on the trip, I made up my mind I would personally standardize as far as possible plant equipment and records in order to determine just how much the cost of operation would be. I failed, very largely because of the fact that standards have not accumulated. It takes time for these to gather. I defy any man to standardize a given dispensary in a given plant in a given industry. We should begin with the education of the physicians and qualify them to handle the situation and those who have industrial dispensaries under them. What I have done is to gather together several ordinary equipments used in dispensary practice.

Two years ago, I stood in the dispensary of a well-known automobile factory. It was during the dressing hour. In the center of the room, which was about 20 feet square, stood a dressing table of usual design. Scattered around the four walls were sterilizers, plumbing fixtures of various kinds, instruments, supply and filing cabinets. Here and there a few chairs were placed, seemingly at random. Two physicians, a nurse and a male attendant were at work, patients occupied the chairs, and others crowded in at the door from the waiting room. A patient, his dressing completed, rose and wormed his way through the crowd at the door.

"Who's next?" the nurse asked. A man limped to the chair just vacated. It happened to be facing away from the dressing table. He took it as it was.

The nurse walked around the chair. "What's yours?" she asked. The man pointed to a foot.

"All right, take your shoe off," and she returned to the dressing table to select a pair of bandage shears. Again she passed around the chair. The man's foot rested on the floor. She bent over and cut the bandage, then moved to a side of the room and tossed the soiled dressing into a waste receptacle.

Returning again to the dressing table the nurse picked up a bit of gauze and saturated it with alcohol. After cleansing the wound she discarded the gauze, going to the waste receptacle at the side of the room as before. Once more she returned to the table, this time to prepare an iodine swab. Having smeared the wound with the antiseptic she discarded the swab, walking a third time to the waste receptacle at the side of the room.

On her next trip to the dressing table the nurse obtained clean gauze and a bandage which she applied in the usual manner. "Hold the bandage," she requested, and the man reached for the unused portion while the nurse straightened up and made a final trip to the dressing table, this time for a pair of shears.

"Come back tomorrow," she said as she cut the loose ends. The man limped through the crowd, and the nurse went over to the filing cabinet to make a record of the dressing. It took her ten minutes to attend this patient, and she walked a distance of 75 feet.

On the dressing table in this dispensary stood a burette. In it was a solution of iodine. The solution could be released a few drops at a time by the turn of a valve. "What is it for?" the physician in charge was asked. "To save iodine," was his reply.

This illustration has not been overdrawn, nor is it unusual. It is an actual condition and fairly representative of conditions that were frequently found in a rather extensive study of industrial dispensaries. During this study economies in materials were often seen among riotous extravagances in time and effort.

Time and effort in industry are extremely valuable. Workers are hired for limited periods each day, and they are expected to utilize those periods in productive work. Injuries are non-productive, and unfortunately they do occur despite efforts to prevent them. Although the greater portion of them are not disabling they require attention. To provide a means for prompt attention for these non-disabling injuries is the principle reason for the existence of plant dispensaries. They may then be considered as essential; nevertheless they are at best unproductive, and it should be borne constantly in mind that the time required for the treatment of injuries is time taken from production, the sole object of industry. Efforts in dispensary practices should therefore be constantly directed toward securing prompt, effective service.

PLANT DISPENSARIES MUST BE ACCESSIBLE.

The location of the dispensary is the first element in prompt service. The dispensary should be centrally situated, or so situatd as to be readily reached by the greatest number of employees most likely to need it. In small plants this is not a matter for serious consideration. In them the dispensary may be placed near the gate, or at the employment office, or anywhere that space is available. But in a large plant the location of the dispensary is a matter worthy of much study. In very large plants, steel mills for example, it is usually wise to establish sub-stations at strategic points, in addition to the main dispensary.

An illustration of the importance of this element in dispensary service occurred recently in Toledo. For the purpose of expansion a certain company in that city acquired a factory building on a site three miles distant from its main plant. A system of transportation was established between the two buildings, and trucks were operated on a half-hourly schedule. Inasmuch as the working force at the new plant was small, the management decided to have those workmen who should need medical attention go over to the dispensary in the main plant for it; they could do so very easily on the trucks. It was soon observed that only the relatively serious injuries were taken care of in this manner. All others were neglected. The men did not want to take the time, and the foremen neither encouraged or forced them to do so. Fortunately no infections appeared and apparently no one suffered from the neglect. Even so, the foremen got together one day a month or so after the branch had been opened and formally requested the management to install a dispensary. Their request was complied with, and there immediately followed an increase of 300 per cent. in the number of patients treated.

The modern industrial dispensary is an evolution of the first aid cabinet. The early stages in its development were marked by the establishment of first-aid rooms. These were followed by the somewhat more elaborate dressing rooms. From time to

time additional functions have been assumed by plant physicians, and other rooms have become necessary, until at the present time plant dispensaries are frequently found to be quite elaborate, possessing features that were formerly seldom seen outside of physicians' offices and hospitals. The modern plant dispensary has become an industrial clinic.

The arrangement of the rooms, the second element in prompt dispensary service, must be such as will permit, (1) accessibility of rooms most frequently in use, (2) passage of patients without confusion and, if possible (3) segregation of the various kinds of patients and visitors. For the purpose of emphasizing particularly the first two of these basic principles the conditions found in the dispensary of a well-known concern located in a large city of the middle west will be cited.

CONFUSION CAUSES IRRITABILITY AND EXHAUSTION.

The plant of this concern covers a great deal of ground and consists of a number of separate buildings. The dispensary is on the top floor of a building centrally situated. I took the elevator, ascended, and with eight others approached the dispensary entrance. The door flew open, and a girl collided with one of us in her rush to the elevator. We entered and joined a small crowd standing before a table just within. On the other side of the table sat a very busy young lady who seemed to be receiving and discharging patients. After a time, and without a glance in my direction, she reached mechanically for the dispensary order I was assumed to have. I gave her my card instead and requested to see the chief physician. She motioned to a nearby table. "Sit down a minute," she said, then in a loud voice called for some one who subsequently proved to be the head nurse.

It was a hall in which I was seated, rather large and evidently used as a waiting room. Patients occupied chairs in groups here and there, apparently waiting outside of the rooms to which they had been assigned, and patients passed back and forth. Nurses mingled with them occasionally. Several times a young woman with records in her hand, entered and returned from the first room opening off the hall; it was the clerical office.

After a while the head nurse appeared, and I was graciously permitted to visit the various rooms and view intimately the work of the attendants.

I found that next behind the clerical office, and used as little by the patients, were the offices of the head nurse and the chief physician. Farthest from the entrance were the physical examination rooms, the dressing, dental, consultation and rest rooms, which were of course in greatest demand.

The work of the attendants was well though hurriedly done, but I gained the impression that they were working under a tension. They were nervous and rushed from patient to patient. They were frequently interrupted and seemed to be hesitant in picking up their previous trains of thought. The faculty of alertness seemingly was dulled.

I spent two hours in this dispensary. When I left, I, myself, felt irritable and exhausted, and my conceptions were confused. I carried away the impression that the place lacked system. This was in spite of the fact that this dispensary is known to be in the hands of competent people and is equipped with the best that money can buy. I was forced to only one conclusion—that the arrangement of the rooms was the handicap. It necessitated much moving to and fro, much retracing of steps, leading inevidently to confusion, mis-spent energy and loss of time.

SEGREGATION OF PATIENTS DESIRABLE.

Accessibility may be gained for all rooms by arranging them around a common waiting room as a center, as was seen in the dispensary of Armour & Company, in its Chicago packing house. Another plan is to provide separate entrances for rooms devoted to special purposes, as has been done in the emergency hospital of the Youngstown Sheet and Tube Company. There, separate entrances have been provided for, (1) ambulatory patients, (2) ambulance patients, (3) employees for physical examination, and (4) visitors to the executive offices of the medical department.

This plan which affords separate entrances seems to be best. It avoids confusion. It provides segregation. Employees seeking physical examination are not submitted to depressing contacts. They do not see large numbers of bandaged fingers, nor limping fellow workmen. They do not see the mutilated man brought in on a stretcher. They receive no suggestion of the harrowing prophecy that they themselves may some day be injured.

It is relatively easy to apply these principles in the planning of large dispensaries; it is difficult in the planning of small dispensaries, especially in those of one, two or three rooms. In these latter arrangements can, nevertheless, usually be made which enable patients to avoid retracing their steps, as for instance by having separate entrance and exit doors. Segregation can best be accomplished in these small dispensaries, at least to some extent, by having the physical examinations made at an hour when dressings are light.

Even though plant dispensaries have become more or less elaborate, the treatment of injuries continues to be the most evident reason for their existence, and the dressing room remains the center of greatest activity and interest. In small dispensaries the dressing room is frequently the sole center of activity. It should therefore be the most directly accessible of all rooms. It should preferably open from the waiting rooms, and patients should be enabled to leave it by some means other than by retiring through the waiting room.

UNIT ARRANGEMENT OF EQUIPMENT EFFECTIVE.

There is nothing peculiar to the equipment of a plant dispensary, which is the third element in prompt service. It is merely ordinary medical and sergical equipment utilized in the care of industrial workers. Association with industrial officials and familiarity with their methods, however, have led plant physicians to a more effective and economical utilization of equipment than is customary in usual medical practices. Efficiency methods have been introduced. Patients are enabled to receive treatments with a minimum of loss in time, attendants to render service without undue fatigue, and consequently to render a better quality of service; incidentally, savings are effected in the use of supplies which is not unimportant in these days of excessive costs.

Probably the most striking feature in the utilization of plant dispensary equipment is in the manner of its arrangement. You will recall that in the beginning of this article reference was made to the dispensary of a well-known automobile factory. The picture presented was one of confusion, wasted time and energy. This condition is now avoided by the groupings of furniture and fixtures into units. There is, for example, the dressing unit. It consists of (1) a dressing table, (2) chairs or stools for the patient and the attendant, (3) a waste receptacle, (4) foot and arm rests, and desirably (5) a stationary wash bowl. Upon the table are placed in an orderly and convenient arrangement such supplies, apparatus and instruments as may be needed for the treatment of injured extremeties—a finger or a toe, a hand or a foot, an arm or a leg. The utility of this unit is readily apparent.

For the treatment of eyes a specialist's unit is appropriate. It consists of, (1) a specialist's chair, (2) a table for the necessary supplies and instruments, (3) a waste receptacle, (4) the essential lighting facilities, and (5) a wash bowl. This unit may be used also in the treatment of any condition about the head and face. If desired the specialist's and dressing units may be combined by substituting the specialist's chair for the patient's stool or chair in the latter.

It occasionally happens that patients must disrobe. Special facilities should be provided for this contingency; at any rate it is convenient to have them. A separate room is desirable for this purpose, and in it there should be, in addition to, (1) a dressing table fully equipped, (2) a waste receptacle, (3) a stationary wash bowl and (4) an operating table of simple design, with possibly (5) a bed. This might be termed the major dressing unit.

For ordinary dispensary service a fourth unit is quite necessary. It is for the keeping of records. The only essential element in it is a filing cabinet, although a desk, typewriter and other office equipment are of advantage. Should it be necessary to combine the record and dressing units, this can be done very easily by placing the filing cabinet within reach of the attendant.

If any trivial medical ailments are given attention, a medical unit is desirable. It should be set up preferably in a consultation room where privacy may be obtained. It might contain, (1) a desk, (2) two chairs, (3) an examination table, (4) a medicine cabinet, and (5) a stationary wash bowl, as well as the (6) usual diagnostic instruments and possibly (7) a small laboratory outfit.

The comments thus far made on equipment are appropriate chiefly to the small dispensary, the one that is used primarily for the treatment of trivial injuries. Nevertheless the unit system is advantageously applicable to large dispensaries. For instance, if the volume of trivial injuries increased beyond the capacity of a single dressing unit others may be added. If employees are to be examined, an examination unit can be added, or of necessary several units. For dental treatments, a dental unit may be added—and, by the way, the dental unit, which is known to all dentists, is a most excellent example of the application of the unit principle.

DRESSING UNIT IS CENTER OF ACTIVITY.

As is true with respect to the arrangement of the rooms in a plant dispensary, so also is it true with respect to the arrangement of the units; those which are in greatest demand should be made the most accessible. As has already been asserted, the dressing rooms should of all others be the most easily reached, and of the units in the dressing room the dressing unit should be the most easily reached; other units may be placed with consideration to their respective values. If the specialist's unit is next after the dressing unit in demand it should be next in accessibility. In this manner the relative values of all units can easily be determined and the positions they should occupy scientifically decided.

Dispensary equipment, generally speaking, is pretty well standardized; it is not necessary to describe each article, but there are some points in connection with certain articles that merit emphasis. For many years I was personally of the belief that a small top dressing table was best, my contention being that the smaller the top the less in the way of useless materials and instruments it would accumulate. I have changed my mind. I am now of the belief that the dressing table should be quite large; it should be, say 21½ x 43½ inches. This is none too large to accommodate the essentials. It should be added, however, that the essentials must be standardized, and if unusual supplies or instruments are needed for a specific purpose they should be withdrawn when no longer required.

Standards of dressing table equipment should be rigidly adhered to, otherwise much that is useless is gathered, and the table becomes cluttered, which militates

against clean effective work. Just what the standard should be is pretty much a personal matter with each individual physician. In our work in Toledo we have gradually come to the adoption of the following list:

(1) One white enameled jar 5″ by 6″ containing 1″ bandages.,

(2) One white enameled jar 5″ by 6″ containing 2″ bandages.

(3) One white enameled jar 5″ by 6″ containing sterile gauze.

(4) One white enameled jar 5″ by 6″ containing sterile cotton.

(5) One white enameled jar 5″ by 6″ containing sterile wooden tongue blades used as spatulas for the application of an ointment and applicators dipped with cotton swabs.

(6) One white enameled jar 3″ x 4″ containing a neutral hydro-carbon ointment.

(7) One covered glass dish, 2″ x 1″ containing sterilized rubber tissue cut into strips for draining purposes.

(8) One white enameled tray 4″ x 17″ containing 6 splinter forceps, 6 sharp pointed scissors and 6 probes, all sterilized.

(9) One medicine glass, containing a 5 per cent. solution of carbolic acid, in which is kept a forceps for the removal of sterile instruments from the previously named tray.

(10) One white enameled tray 3″ x 8″ in which are discarded used instruments and from which they are gathered from time to time for sterilization.

(11) One hard rubber atomizer containing a two per cent. solution of iodine.

(12) One ordinary atomizer containing Dakin's solution, made fresh daily.

(13) One atomizer containing a solution of iodine in hydra-carbon oil.

(14) One atomizer containing benzine.

(15) One can of ether.

(16) One jar of solidified liniment.

(17) Several ¼″ strips of adhesive plaster 1″ long.

(18) One bandage shears.

(19) A number of aluminum finger guards. (These, by the way, are very useful; they enable workmen who have lacerated finger tips to continue at work with a great deal more comfort than if unguarded).

I have given considerable space to this description of the dressing table equipment for the reason that I am of the opinion (this is repetition, but it is for emphasis) that promptness and efficiency in dispensary service begin with the treatment of injuries, begin and radiate from the dressing table. Certainly, in the vast majority of plants, the most apparent and frequently the only reason for the existence of medical service is the accidental injury. The injury is the physicians introduction to the plant. If he utilizes it to advantage he will be able to assume other duties from time to time and the condition of other units will come as a matter of course.

PHYSICIAN RESPONSIBLE FOR ACTS OF NURSES.

The fourth element in good plant dispensary service is personnel. Needless to say a physician should be in charge. If not present throughout the entire day he should have definite hours during which his attendance can be relied upon. A rather common practice has grown up among small industrial establishments of having nurses on duty to attend to all patients and to call in physicians only when they are confronted with cases they deem to be beyond their ability. This is extremely fallacious if for no other reason than that under these circumstances nurses are deemed to be practising medicine and are consequently in violation of medical practice acts. The attending physician is of course held responsible for the acts of the nurse. He should therefore view all cases. It is not necessary, of course, that he dress all injuries. This duty he may delegate to nurses or even untrained assistants so long as he exercises supervision over them. One physician in a large

dispensary is able to handle a considerable volume of work each day by viewing all patients upon their entry and by assigning them with definite instructions to various attendants.

Inasmuch as physicians are notoriously negligent in the matter of records and busy nurses are not overly competent in this respect, there should be among the dispensary personnel a clerk or a stenographer whose duty it is to keep the records. As a matter of fact, it is cheaper to employ a clerk for this purpose than to require record keeping of physicians and nurses who may use their time to better advantage in the actual treatment of patients.

Is your dispensary neat and clean? Does it do you credit? These are questions that might well be put to many industrial physicians. Over in Youngstown I saw a dispensary that was a credit to its directing physician. It was at one of the plants of the Carnegie Steel Co. I was present during the dressing hour, and in that time something like 25 patients were taken care of. At the end of the hour the floor was just as immaculate as it had been in the beginning; it was without a single spot on it. The dressing table was neat, and the equipment throughout was in tidy arrangement. This was made possible by the constant efforts of a negro attendant whose duty it was to keep the place clean and in order. To require menial service of a nurse is neither dignified nor effective in dispensary practice. The constant presence of a caretaker is justified, for nothing reflects so derogatorily against the quality of service that a plant dispensary might be expected to render as an unkept appearance. Clean rooms can be secured only through constant attention of a caretaker.

The appearance of the various attendants, physician, nurse, and clerk is likewise of great importance because of the effect it has upon the employees who have occasion to visit the dispensary. Their conduct is also of exceedingly great importance. In selecting physicians and nurses we consider, (1) knowledge, of course, and (2) experience, but these we do not consider to be the major points. They weigh perhaps equally with the following points: (3) appearance, (4) conduct, (5) loyalty, (6) industry, (7) co-operation, (8) initiative, (9) responsibility, and (10) regularity.

PHYSICIANS MUST CREATE DEMAND FOR THEIR SERVICES.

The methods of giving treatment constitute the fifth element in plant dispensary service. The facts that a physician has been employed by the management of a company to attend injured employees and is given a dispensary in which to do so do not necessarily imply that his service will be acceptable to the employees of that company; in the last analysis, if the physician will satisfy the management, he must satisfy the employees. The plant physician is therefore constantly face to face with the necessity of creating and fostering a demand for his service among the working people of his establishment. This is ofttimes quite difficult to do for employees are a discriminating and frequently a critical people. They know when they are well treated, and they know when results are uniformly bad.

Unfortunately, in dispensary practice physicians cannot always treat patients as they would in private practice. They are forced to delegate small duties to others. There is danger in this that the service might become mechanical in nature and the patients thereby get the idea that they are being slighted. The methods of rendering service are therefore of extreme importance.

It is very generally understood in salesmanship that the introduction, or the approach as it is termed, may determine the success or failure of a salesman. So it is with the introduction of a patient into the plant dispensary. The manner in which he is received may determine his impression of the service he is given.

In one of our own dispensaries in Toledo, a small one, there is an attendant who acts also as the safety man. Whenever an injured employee comes in, this attendant thinks of his safety record, and he scolds because an accident has happened. The condition has become so bad that the employees are now reluctant to seek treatment for injuries, and infections are beginning to appear. This spirit is quite to the contrary of that which has been built up in a nearby plant by the attending nurse. She receives all the patients pleasantly and with a womanly dignity that has won their hearts and loyalty. The service in her dispensary is appreciated and popular. There is not a man in the plant who does not seek the service when he needs it, and there are none who seek it unnecessarily. Although we visit this dispensary daily and view all patients we are frank to give this nurse the credit for effective service.

One full-time physician has solved the problem of the introduction of patients to his dispensary by meeting all of them himself. He takes off their soiled dressings and views the wounds, then assigns them to attendants with a few works of instruction. This physician is tremendously popular in his plant, and he has the reputation of being a very capable man.

STANDARDS OF WOUND TREATMENT.

We serve a number of industries, mostly on a part-time basis, and our organization is such that we occasionally are forced to rotate the physicians who visit the various plants. This means that several physicians may attend one patient during the course of his recovery. The fault of this system was brought to our attention one day by a patient who remarked that every time a different doctor took care of him the treatment was changed, with the result that he had become sceptical of all. We have sought fairly successfully to overcome this by standardizing the use of antiseptics and medicaments used in treating wounds. The standards are as follows:

FRESH WOUND.

(1) Remove devitalized tissue.
(2) Cleanse with ether.
(3) Spray with iodine (2% solution) into wound.
(4) Pack cavities with dry gauze.
(5) Dress dry.

INFECTED WOUND.

Treat all wounds as though infected the second, third and fourth days after injury is received.

(1) Remove all scabs and loose skin.
(2) Cleanse with ether.
(3) Spray with chlorinated solution.
(4) Pack cavities with gauze saturated with chlorinated solution.
(5) Dress moist.

CLEAN WOUND.

Treat all wounds as clean on the fifth day and after unless infected.

(1) Spray with antiseptic oil (a neutral hydro-carbon oil containing iodine).
(2) Pack with dry gauze if necessary.
(3) Dress dry.

INDOLENT WOUND.

(1) Cleanse with ether.
(2) Spray with argyrol (5% solution) or balsam of peru.
(3) Pack with dry gauze if necessary.
(4) Dress dry, using slight pressure.

BURNS.

(1) Apply hydro-carbon salve, and dress dry.
(2) This may later be varied with antiseptic oil.
(3) Or treated as an indolent wound.

Perhaps these standards are not all that could be desired, but we believe they are a step in the right direction, and they are serving to give us a basis for observation which will probably lead to definite conclusions. At any rate they have solved the problem mentioned.

All industrial physicians evolve from time to time little things in the way of instruments, or supplies, or procedures that help them to improve their service. In our own practice, for example, the substitution of the atomizer for the swab has proven very satisfactory. The little trick of leaving the beginning of a bandage loose and tying the end to it when the application is completed has also proven effective. The bandages stay better. And the use of the aluminum guard on the lacerated end of a finger has helped us to return many a man to work who otherwise would probably lay off.

Records, the sixth element in prompt effective service, are of very much importance, not alone from the standpoint of compensation, but from the standpoint of the physician himself. I need not enlarge upon this point; we all realize it; the chief difficulty is to determine what records should be kept and how to keep them. We have decided that records should be grouped into three classes (1) those relating to the individual injury or illness, (2) the chronological history of each workman with respect to injury and illness, and (3) the summary of the variety and volume of cases treated.

The record of illness should be such as will identify the patient, the nature of the illness, the dates and character of treatments, and the results. When the patient is discharged the record may be filed in a jacket or folder, together with other records of illness and injury which concern the patient, and the case summarized in spaces prepared for that purpose on the front of the jacket.

The injury records should be kept in a similar manner. If this record is needed to establish the validity and amount of compensation payable, it will be found advantageous to make it a duplicate of the report made to the compensating agency.

The chronological history of the illness and injuries of each workman may be kept on the face of the jacket containing his case histories. This record is a tremendous importance in the supervision of health. If a workman becomes a repeater or a chronic complainer, that fact becomes readily evident in the chronological history and serves as a visual reminder to the physician. It also serves as a key for the investigation, suggesting lines of procedure and remedial agencies.

The summary of the variety and volume of cases is particularly useful in keeping the physician informed on conditions in the plant. This can be kept on a sheet ruled vertically and horizontally, the columns to indicate the variety of cases, the horizontal lines the volume. The record is compiled by adding a line for each day. Comparisons are thereby permitted at any time, and totals may be drawn when desired. If acute respiratory infections increase it becomes quickly evident, and the same is true with respect to the various injuries that occur. The summary is really the pulse that enables the physician to keep informed on the health of all the workmen and conditions generally in the plant.

In closing it is desirable that six points be re-emphasized: (1) Plant dispensaries should be accessibly located. (2) The arrangement of the rooms should be such that those which are used most will be most accessible. (3) Equipment should be grouped in uits and the units so arranged that those most used will be most accessable. (4) Personnel should be pleasant and pleasing to look at as well versed in knowledge and trained in technic. (5) Patients should be treated with the same consideration and conscientious attention as though they were private patients. (6) Records should concern individual cases of injury and illness, chronological histories of each workman, and show in summary form the variety and volume of cases occurring.

DR. PATTERSON: I am quite sure that every one of us in the hall has a much better idea now of how to operate our dispensaries. The last subject is perhaps the most important that we will have to consider. Before doing so I want to announce that the annual meeting of our National Association will be held in New Orleans on April 26 and 27, and we are counting on having you all to join us there.

New York has introduced a bill for the compensation of diseases. We have no such law in Pennsylvania. We have no law requiring the reporting of occupational diseases. There are some which according to law should be reported, but we feel sure that the records of our Department do not begin to give the names of these diseases occurring throughout the year within our Commonwealth.

Dr. Hoffman needs no introduction in this country or perhaps any other. He has just returned from making extensive surveys in England, and it is our great privilege to have Dr. Hoffman address us on the subject of, "Occupational Diseases and their Compensation," and I present him to you with great pleasure.

OCCUPATIONAL DISEASES AND THEIR COMPENSTION.

BY DR. FREDERICK HOFFMAN, THIRD VICE PRESIDENT AND STATISTICIAN, PRUDENTIAL INSURANCE COMPANY OF AMERICA.

Mr. Chairman, Ladies and Gentlemen: Dr. Patterson has properly drawn attention to the practical importance of adequate compensation for industrial diseases. Failure to enact proper legislation is unquestionably one of the underlying causes of the prevailing amount of industrial unrest. Thus far the principle of compensation for industrial diseases has been adopted in only a few state, particularly Massachusetts, California, Wisconsin, the Territory of Hawaii, and also by the Federal Government. At the present time, however, a bill is under consideration by the legislature of the State of New York, with every assurance of early passage. If this happy anticipation should be realized an immense step in advance would be gained, for in all legislation of this kind the four states of Massachusetts, California, Wisconsin and New York practically determine the policy of the country at large.

I have on four or five previous occasions spoken in this hall on this same subject, but I would gladly discuss it every day if by doing so the ultimate objective could be brought nearer to an early solution. No labor legislation, in my judgment, is more likely to give furtherance to the cause of social justice and to remove the causes of social unrest than adequate compensation for industrial diseases. It no doubt, from a practical point of view, is a difficult matter to define such diseases in the strict legal sense of the term. In many cases cause and effect lie wide apart and the death particularly is frequently not traceable to the original circumstances which give rise to the affliction. It is a question for men of broad views and vision to attack this problem with the same commendable courage as was the case in compensation for industrial accidents.

As a prerequisite for industrial disease compensation, it is necessary to enact, and subsequently to enforce, legislation requiring the reporting of such diseases with both promptness and accuracy. It is only on the basis of prompt information that measures aiming at public prevention and control are likely to be effective. It is the absence of definite information that precludes, on the present occasion, a thoroughly convincing presentation of the facts. We do not know the amount of injury that is really done, and we cannot more than venture an approximate guess as to the probable amount of harm that is being done, largely because of indifference and neglect of conditions for the existence of which there is no plausible excuse.

But progress has been made in the clear recognition of the principle of justice inherent in workmen's compensation for industrial diseases on the part of leading states, and there is every hope that the precedent set will be followed on the part of many other states, including the great Commonwealth of Pennsylvania. There is a growing consciousness on the part of the public that the problem can be solved if approached in a reasonable spirit of conciliation rather than on the basis of abstract legal right in the strict sense of a legal definition.

As far as I am in a position to judge, the Massachusetts law is an admirable compromise well adapted to meet a rather complex state of affairs. The Massachusetts law clearly recognizes that all injuries sustained in the course of the employment, or arising out of the employment, require to be compensated for in monetary damages irrespective of whether the injury is a fortuitous event or patholigic

in the medical sense of the term. No precise definition of an occupational disease will ever be adopted satisfactory to all concerned. It seems best to leave the decision as to whether any particular injury is the result of conditions inherent in the employment to a board of compensation commissioners or experts otherwise thoroughly familiar with all the facts. This principle does not necessarily oppose the adoption of a specified schedule of recognized occupational affections for which compensation should be paid.

The principle of the English law, which includes some 24 schedules of occupational diseases, is admirably and well adapted to the major group of specified occupational affections. But it falls lamentably short of what is required in the case of such important diseases as pneumonoconiosis, or industrial lung disease, caused unquestionably by the continual and considerable inhalation of industrial dust. That the list as given in the British act is totally inadequate at the present time is best illustrated by the statistics of occupational disease occurrence in the State of California, which include, for illustration, hop infection, cement poisoning, redwood poisoning, salt infection, barium chloride poisoning, cyanide poisoning, laundry infections, malaria, creosote poisoning, smallpox, and typhoid fever.

Those who many years ago read Jerome K. Jerome's "Three Men in a Boat, to Say Nothing of the Dog," may recall that much was made of the reading of a book on the symptoms of diseases, and the final conclusion that the reader suffered from all the ailments described except housemaid's knee. That this affliction is not unimportant in California is shown by the fact that there were four cases of this infection in construction, two cases in manufacturing, one case in transportation, and one case in trade. Such cases frequently come to light only when compensation is payable, since they are generally not of a nature sufficiently serious to cause death. A parallel case is the apparent nonoccurrence of miners' nystagmus, a disease relatively common in British and Belgian coal mines. There are reasons for believing that the disease occurs, though perhaps in not as serious a form, in some of our coal mines, in which the use of the common safety lamp is compulsory. Under occupational disease compensation such cases would come to light and become subject to early and remedial treatment.

It would be utterly impossible to define all of the occupational diseases and it therefore seems much better to adopt the principle of the Massachusetts law, which leaves the adjudication of such cases to the Industrial Board. There are numerous diseases which, in the ordinary sense of the term, are not occupational but which, under given conditions, become such as the result of ignorance and neglect in industrial management.

Malaria is an excellent illustration. Malaria is one of the most widely disseminated general diseases afflicting alike the occupied and the unoccupied, but there can be no question that the frequency of the disease is considerably increased in particular occupations in which exposure to the malaria-transmitting mosquito is practically unavoidable. This, for illustration, is often the case in rice planting, in irrigation works, in dock labor, in the case of night watchman, etc. Malaria as a disease is of infinitely greater importance than as a cause of death, and malaria unquestionably results in a large economic loss, chiefly because of ignorance and indifference to unsanitary conditions affecting certain industries. This is particularly true of the State of California, where, as the result of gross neglect on the part of the State the disease is gaining a foothold in many localities formerly free therefrom, in consequence of the development of rice planting and irrigation on a large scale. It seems of the essence of cruelty that workmen and their dependents should suffer the economic consequence of such neglect.

Anthrax is another excellent illustration. Recently there have been a number of anthrax cases traceable to the handling of infected hair imported from Argentina, or possibly the Far East. Anthrax is a rare disease, frequently wrongfully diagnosed

in its earlier stages, with fatal results to the patient. The government is largely responsible for the proper disinfection of hair and hides from countries in which anthrax originates. There has not been the progress in methods of disinfection reasonably to be anticipated in the light of our modern knowledge as to the nature of the disease. As I have said in the case of men exposed wrongfully to malaria, it is equally of the essence of cruelty to expect the afflicted workmen suffering from this loathsome and often fatal infection to bear the additional economic burden of protracted illness. I can not do better than direct attention to the admirable work done by the Bradford Anthrax Investigation abroad, which, if it has not succeeded in eliminating the disease, has certainly done much to reduce it to a minimum otherwise absolutely unobtainable. But of all these afflictions or industrial diseases, by far the most important is industrial pneumonoconiosis, or dust phthisis. This disease has been made the subject of an admirable discussion by Dr. Edgar L. Collis, now professor of industrial medicine in the University of Wales.

The Milroy Lectures (1915), by Doctor Collis, include for the first time an extended consideration of industrial asthma, industrial bronchitis, industrial pneumonia, and dust phthisis proper or pulmonary silicosis, which in popular recognition, as pointed out by Dr. Collis, is frequently referred to as "rot" when applied to the disease as it occurs among potters, stone masons, grinders, etc. In this and a large group of other industrial infections it is of the utmost importance that the facts should be ascertained by impartial and qualified official inquiries. There has not been the anticipated progress in the necessary official investigations, the importance of which was first clearly shown by the result of the researches of Sir Thomas Oliver and others. Nor have the far reaching possibilities of prevention in industrial medicine been recognized by the associated activities engaged in fighting tuberculosis, mostly after the infecton has taken place.

As another illustration of the line of qualified research work most urgently needed in this country attention may be directed to the admirable reports on miners' phthisis, by the Union of South Africa. The publications of the Miners' Phthisis Board, and the Miners' Phthisis Medical Bureau of South Africa, indicate a stage of progress which we are very far indeed from having reached in this country. The same conclusion applies to the work of the South African Institute for Medical Research, which has concerned itself with such questions as the etiology, manifestations, and prevention of pneumonia, and, the ash content of silicotic lungs. Without these auxiliary methods of investigation all official or corporate action must necessarily fall short of the best obtainable results.

Nor have we in this country as yet reached the degree of active and whole-hearted cooperation on the part of commercial bodies, trade organizations, labor unions, etc., all vitally interested in the substantial reduction of occupational disease occurrence, as has been the case in South Africa. The reports of the Rhodesia Chamber of Mines are an admirable illustration of the careful consideration of the health question in its particular relation to the mining industry and as an underlying problem in the cost of production affected by the cost of sickness compensation. What can be done in this country, however, has been emphasized in the course of a recent investigation into the problem of dust phthisis in the granite cutting centers of Vermont. The really extraordinary results of that investigation are directly due to the wholehearted cooperation of the Granite Manufacturers Association, the labor union, the state board of Health, the Commissioner of Industries, the local medical profession, etc. That investigation emphasized another neglected aspect of the industrial disease problem and that is the neglect to utilize the sickness and mortality records of labor unions.

It is something very considerably to the credit of the Granite Cutters' International Association of America that they should have readily agreed to place the entire and confidential medical records, extending over a period of more than 20

years at the disposal of those in charge of the inquiry. The local branch of the association went further and subsequently agreed to a substantial assessment to provide part of the cost of an x-ray examiuation of the chests of employed stoneworkers, an inquiry unfortunately interrupted by a prolonged strike. My own investigations have never failed to bring forth the practical assistance of labor organizatious in so far as they were in possession of data that could be utilized for practical purposes.

The problem of occupational disease compensation touches upon related phases of the labor question in its larger aspects. One of the most neglected phases is the proper recognition of the urgency of adequate vacation periods on the part of industrial workers exposed to conditions more or less predisposing to ill-health. It was shown by the Barre investigation that the majority of stoneworkers never took a prolonged vacation. The investigation further emphasized the need of much better shop supervision and of the possible need of state control over conditions of employment such as the closing of the shop during the winter months, when the risk of dust inhalation is practically at its worst. To an increasing extent it is becoming the practice of large corporations to grant vacations to their workmen in the same way as to their salaried employees, with full pay. This, I understand, for illustration, is the case in the Norton factory, which in this as in other respects, has tried to serve as an example worthy to be followed.

In its more restricted aspects the problem bears upon the question of so-called unemployed insurance. Such insurauce generally rests upon the false principle that compensation is only payable for absence from work during health. A rational reconsideration of the principle of all social insurance would suggest the advisability of combining economic provisiou for unemployment with sickness and accidents, or iuvoluntary absence from work for any cause whatsoever. This, however, is not insurance, but only called such in the absence of a more satisfactory term in the English language. It is a provisiou, a security, rather than insurance in the accepted sense of the term on the principle of a contributionship, in which all pay and share alike. A provision against unemployment, or the cessation of income during involuntary idleness, sickness, accident, or invalidity, due to old age, all can be comprehended in a much more satisfactory manner under the existing system of social insurance if based upon sound conceptions of social justice and a humanitarianism really adapted to modern needs. To the employee it is quite immaterial from an economic point of view whether his income has ceased because of unemployment or illness or accident, or some other cause. The fundamental consideration, in other words, should not be illness or accident, but inability to earn wages compatible with what Mr. Rowntree of York, has properly called "the human needs of Labor."

The foregoing observations are not intended as an adequate presentation of a question which has received the consideration from some of the foremost medical and leading labor minds of the country. I have tried, however, to make clear my conviction, based upon perhaps the widest inquiry ever made into the subject, that social insurauce is not a solution of the prevailing social discontent in the labor world, but that the existing difficulties can and must be met in a clear recognition of the principles of prevention and adequate compensation to those injured as the result of ascertained conditions inimical to life and health in industry.

DR. PATTERSON: I am sure we are all grateful to Dr. Hoffman for addressing us upon this subject. The hour grows late, and, in conclusiou, I want to express to you our deep appreciatiou of the courtesy of your coming and trying to help us solve these problems together. The meeting stands adjourned.

THURSDAY, MARCH 25.

EVENING SESSION.

CONFERENCE OF REFEREES, WORKMEN'S COMPENSATION BOARD.

CHAIRMAN: HARRY A. MACKEY, CHAIRMAN, WORKMEN'S COMPENSATION BOARD.

INTRODUCTORY REMARKS.

BY COMMISSIONER C. B. CONNELLEY, DEPARTMENT OF LABOR AND INDUSTRY.

The closing of the Pennsylvania Safety Congress of 1920, with a conference of referees of the Workmen's Compensation Board, while inserted in the program, as an afterthought, has a peculiar significance. Compensation came into the safety movement as the added factor to give stability to the movement at a time when its propaganda rested largely on inspiration gained through humanitarian motives. While the safety movement could never succeed without the appeal to the heart—and we are determined that this touch shall predominate—yet we know human nature well enough to declare that there are some people whom we must convince by other than the heart method. Hence the necessity for compensation laws, such as we have them by the Acts of 1915 and 1919.

It is fitting, therefore, that this Congress should call together all those who are directly concerned in the interpretation and enforcement of the compensation laws. The experience of the men in the field is of special importance and it is a happy suggestion, indeed, to announce this innercircle meeting as a symposium. I trust that the experiences which are exchanged, especially in the application of the newer phases of the law, will give the necessary boldness to come before the Safety Congress of next year to present the work of the board in a more public manner and as a vital part of the Congress.

I desire to congratulate Mr. Mackey and his colaborers, particularly the referees, in the great work that has been accomplished in the interest of the industries, as well as the workers of the Commonwealth. It is a fortunate coincidence that in the appointment of Mr. Frank Feeney, as Supervising Referee, we have the services of one who is largely responsible for bringing compensation to the attention of the legislators. It will be a matter of compelling interest to watch the development of the Bureau of Rehabilitation, which has come into being as the result of experience obtained in the field of compensation.

MR. HARRY A. MACKEY: Commissioner Connelley, Ladies and Gentlemen: This is a referees' conference tonight. Our compensation bill has a great many important provisions and a great many able men and women devoting their time to the work. I have never made it a practice to praise a man to his face. If I had any criticism or fault, I preferred to say that to his face, but praise I generally said behind his back. But I am going to depart from my usual way tonight, for in viewing the work of the Compensation Act yesterday—had it not been for the part the referees have taken, this could never have been.

Their problems have been many and perplexing. They had to break the ground. They had to take a new piece of legislation which is not at all understood. I presume when this will pass the legislature there will be only four or five men in the whole State of Pennsylvania who will really understand it all or really know what they are driving at.

Mr. Bohlen at my right (I have to say this in his presence) was the first authority in Pennsylvania on compensation laws. He has given years of thought and study and hard work to the secretary of the commission, who furnished the first bill that passed the lower house and failed to pass the Senate in 1913. At that time it seemed a great calamity, but it has proven itself a blessing for it so developed the thought as to give us our Act of 1915 that it was really worth while waiting for. And then these referees had to take this law and go out to the people with it, and when you come to understand and just to stop for a moment to think of the conditions in the State, you will readily realize how great was their task.

Pennsylvania has always been a conserving State. Pennsylvania in our courts of justice still adheres to the old common laws. Our laws have never been entirely changed as with many States and we still practice law as our forefathers did, with the same motives of course, but our relations between employer and employee still remain. Therefore, we had a general and particular school of practice. It was only a few years ago, thirty or forty years, before the advent of this law, that the Superior Court drew up a form and placed in on record that the employer should be respousible for any injury to an employee, particularly if that injury was sustained at the hands of a fellow employee. Some day I am going to write some extracts from the opinions of the old judges in that respect, and then place side by side the opinions of the present day judges.

Justice Vou Moschzisker who has been a great friend to the compensation law, and so this man had to go out and face a bar and bench schedule in the old tradition, and probably the least informed man of any group as to what a compensation law meant, nor what the judges of the State who viewed our opinions thought, but in that respect if you will glance at any time at the foreword which we placed in the volume of court decisions which I have the honor to edit, a tribute to the Courts of Pennsylvania for the magnificent spirit and moral courage they gave us, and then this man had to go out and face first-haud the iujured man, a representative of the employer, and get him to realize this was to us law and the thought that perhaps it was some scheme of the physician whereby they would have to surround their property rights with no chance to defend themselves.

And so they went out and they have done well, aud, therefore, I am not going to set myself up tonight to pass the fiual word on any question that migh be asked. It would uot be becoming where I had to make a defiuite opinion, and in the next place these men know more about the law than any group of our Compensation Board, because they have the practical experiences. But I just want to give you au idea of what the court said. I read a portion of this yesterday. In the case of Philadelphia County, Reynolds versus Philadelphia and Reading Railway Company, Judge Finletter, on Workmen's Compensation, Interstate Commerce, Member of Wrecking crew, Removing obstruction to instrumentality used in both inter and intrastate commerce. A member of a traiu crew who was killed while engaged in the moving of a derailed engine from an ash pit track used indiscriminately for intra and inter state commerce, was eugaged in interstate commerce, and his dependents are not entitled to compensatiou under the Pennsylvania Act. In the Court of Common Pleas of Philadelphia County, June term, 1918, number 2708. C. P. number four. Appeal from Workmen's Compensation Board sustained. Board reversed.

I was somewhat interested in a paper read by an old friend, Dr. Fisher, today on the problem of the mailingerer; the man who pretends to be hurt when he is not or the man who attempts to exteud the period of disabiliy beyond the fact. It was a very fine paper. It would have been more appropriate, however, I think, if addressed to a gatheriug of representative groups who still have to meet common law liability addressed to claim agents because I believe these gentlemen here,—these referees will bear out our observatiou as to member of the board that it is not a serious thing in Pennsylvania.

In the first place, I have such confidence in the loyalty of the men of Pennsylvania that I know of no workman who with the present state of wages, would prefer to surrender 30, 40, 60 or 75 dollars a week merely to receive 10 dollars a week, but we have no fear of that subject, because any fellow who sends up a case and gets by these referees and the industrial surgeons employed by his employer to handle these cases, and Dr. Wallers and Dr. Blakely as advisors on the board, I must hand it out to him; he ought to go on the stage. He is a very successful actor.

But in all kindness, I might have said to that body of industrial surgeons that I also believe these men will bear out my observation as a member of the board that instead of the malingerers giving us much trouble, we are a great deal more troubled by the industrial surgeon who tries to put the men back to work before he really ought to go. One of the largest departments of the work is the "Review of Agreements," where a man has willingly signed his final receipt, taking his final payment of compensation, believing the judgment of the physician is sound and that he is able to resume work, and he makes an honest effort and finds he cannot, and he has a recurrence of his disability. Then he wants to take the initiative and review that final receipt of his final compensation can be made. And that has become a large percentage of our work.

I am not going to make a speech, outside of a few things I have reduced to writing. I am glad you are all here, but I am talking to the referees entirely tonight. I am sure if I can interest these referees I have the largest quantity, because these are very critical gentlemen, schooled about this law, and the fellow who wants to lay something before them, must think quick and often. But just for their benefit, and your edification, I thought I would put some thoughts on paper.

In order to thoroughly appreciate the nature of our task, it is indispensable that we become not only familiar with the compensation law itself, but with the State, her people and her industries. In order to intelligently apply written law to ascertained facts, we must acquire a wider vision than that gained by mere technical knowledge. Our vision must extend beyond our hearing rooms, and we must bring within our horoscope Pennsylvania, her people, her industries, her geography, her traditions, her ambitions, past and future. A recluse would be a failure in compensation work, for no matter how well he might konw the law, he could not apply it with common sense nor with satisfactory results.

One of the most efficient means of realizing the extent of a country, the greatness of its people, and the magnitude of its undertakings, is by comparison. At the Lowell centenary, John Galsworthy, at that time touring this country, was the orator of the day and, in paying a deserved tribute to that greatest intellect of all the New England group of writers, said that he was wondering what those men of the 14th, 15th and 16th centuries who had welded the English language, would think if they could have visited that meeting and sat there in their monkish dress, or in bright armor, or in homespun, having returned from a land of the Far Shades. He wondered what would be the expression on their faces when they realized the tremendous fact that their language, which they had forged in the cottages, in the courts, in the cloisters and in the castles had become the first speech of half the world and the second in the other half, and how they would be filled with amazement to know that the speech which they had cast and Shakespeare had crowned, is now spoken from the Southern Cross to the Arctic Seas!

And so it would be interesting if the old settler of Pennsylvania could sit with us to night. The old Philadelphia Quaker, the German of the Schuylkill Valley or the old Scotch Irishman who always pushed on relentlessly—westward bound. What would they to-night think of their Pennsylvania whose existence was foreshadowed because of their faith, bravery and untiring labor? What would the driver of the old Conestoga wagon think of the train that brought him here tonight? What would they think of the mines, the factories and workshops of Penn-

sylvania, concerning which they had heard all these tales at this conference? What could they think of our steel, iron oil and coal? What would these old fellows, whose thought of safety only concerned their homes and fields, protecting them from the encroachment of the hostile Indians, think when they heard the stories of machinery propelled by some unknown and weird power, to their primitive minds—mysterious instruments of destruction?

What would they think of Pennsylvania's population, twice that of Ireland, and equal to that of Belgium and Norway and Switzerland? What would the thrifty German, who tilled the soil with his flint lock by his side, think of his Pennsylvania, whose farm land had become worth $2.500,000,000? Could they grasp the import of the tremendous output of our soil, upwards of $400,000,000 per year? What would this little group of early settlers, who thought they were real captains of industry when they employed a half dozen men, who ate with them and called them by their first names, and shared their joys and sorrows as one family, think of the fact that their Pennsylvania now houses 2,000,000 employes, and there have been attracted to their State 500,000 foreign born employes?

What would the German mill owner of the Perkiomen or the Schuylkill think of the fact that he had been the fore-runner of 200,000 employers, who now delve deep into the earth to bring out over 600 metals to make for Pennsylvania's greatness? And could they be made to belive that from beneath that same soil that they tilled, there had been brought up a black deposit to them unknown, that has become the fuel of all peoples, and whose dynamite force had warmed the world, developed great industries, propelled ships and won a world's war? They certainly could not grasp the meaning of the fact that in Pennsylvania, during the year of 1919, there was turned out a fuel called "coal," whose value at points of distribution was $1,200,000,000. What would they think of Philadelphia, Pittsburgh, Scranton and our other magnificent cities and towns?

And I wonder what old Thaddeus Stevens would think of his school system for which he fought right here in this town, and achieved the greatest victory that any man ever gained in legislative halls. What would he think of the present day appropriation to the free schools of Pennsylvania—$12,000,000 by our last legislature.

Penn, Franklin, Thomas Lloyd, John Dickinson, Henry Muhlenberg, Robert Proud, Dr. Rush, Gen. Wayne, James Wilson,—all those and a host of others would be out of step to-day. Their Pennsylvania, the keystone of the old arch, has always led the way, and I think I could hear them say if they could come back, "We builded better than we knew. We kept the faith and have handed to you a heritage rich beyond our dreams and responsibilities so great that you must shudder as you realize them."

It is by some mental processes such as these that can force upon us some appreciation of the wonders of the day, of the magnitude of our enterprises, and what it really means to be a citizen of Pennsylvania and to assume the responsibilities of administration.

The figures of 1919 in our bureau are oppressive, but when we once realize their tremendous import, it ought to renew our purposes to co-operate in this work, not for the purpose of amassing awe-inspiring statistics of which we might be proud if looked at them from a false viewpoint, but to constitute ourselves anew, crusaders for the conservation of the working forces of our State, and to erect new standards of safety.

The fact that 1919 presented to us 152,000 accidents in Pennsylvania, as a toll of our industrial greatness is a cloud with only one silver lining, and that is that they are 103,000 less than 1916. The fact that Pennsylvania lost in 1919,—2,053,-277 days through industrial accidents, is a calamity beyond repairs.—days that cannot be made up. Think of the dynamic force in 2,000,000 working days. Each accident gave us an average loss of 13 46/100 days. The wage loss was $8,075,698,

and the average wage loss in each accident was $57.47. These accidents involved 125,380 dependent women and children.

Of course, it is some satisfaction to know that our scheme of compensation has been so well developed that the consuming public, without complaint, allowed a sufficient cost of production to be added to the price of the articles used and consumed, to meet awards of compensation, covering all cases for one year of a little over $10,000,000. $2,123,000 was actually paid in fatal accidents, and $3,916,000 for non-fatal accidents.

The legislature of 1919 met the popular demand to a certain extent, and gave us increased compensation, extension of the medical period, and reduced the waiting period. It added some other changes and procedural modifications which will be under discussion tonight.

It is well that we enter into such discussions in order to better equip ourselves for the duties that are placed upon us in our work. It is necessary that we should be thoroughly equipped and keen to adjust the law to facts. The burden of my thought in opening this symposium is to impress upon you the enormous responsibility of the task of not only affording immediate relief at a time when most needed, assuaging grief and dispelling the clouds of apprehension, but to establish in your minds the fact that your opportunities for working out the problems of American daily life place you in the privileged class.

You meet the injured men face to face. Your kindness, tact and visualization of Pennsylvania's great purpose will hearten many discouraged workmen. Your advice will re-direct a very large class back to the standards of our democracy and your quick service will rehabilitate the bodies and instill hope and determination in many a manly man.

There are some of us here who have been with us from the very beginning, and are old timers. Changes have been made and we have some familiar faces who have always been before us and some who have always haunted us; Mr. Scott, John A. who was with the Board from the beginning, and a most distinguished lawyer, resigned some time since to undertake very important professional work in the Western part of the State. The Governor in his place appointed another distinguished gentleman, a man of experience, here in Harrisburg; one time a senator, an active practitioner of the bar in Mercer County, and a man of my short acquaintance, who has endeared himself and made himself one of the active functionaries in Pennsylvania. No subject has been assigned to Mr. Benjamin Jarrett, and he was not really apprised of the fact that he must speak, but believing that like a true soldier he would face the firing line and say something, we have decided to call on him, and I take pleasure in presenting Mr. Jarrett.

MR. JARRETT: Ladies and Gentlemen: Mr. Mackey has given me an introduction I am afraid I cannot cope with. He told me I was called here tonight and had to say something, but that I was not supposed to make an address, and I am not going to do it. I have listened attentively to the part that I was able to hear after getting here, and from it I must conclude that the part I did not hear was as good as the part I did hear. But I think it is very unfair to me, a new member of the board, to be called up and even to get up and say that I have nothing to say and then sit down.

In Philadelphia, when first elected to the legislature, I was told, "When you go down, say nothing as you will get in bad. I think the less you say, the better off you will be." As a new member, I think tonight the least I say the better. Even in the position I am here, I think it is very unfair to me. I am to follow Mr. Mackey, who has made such an able address. I think it is unfair to call on me after making this address, and then to have me followed by the wisest man that ever lived—Solomon. When I look down the line and see the spectators, headed by Solomon, I have to hand it to the wisest man, Solomon.

MR. MACKEY: I want you gentlemen to deviate a little from the program because of the human element among these referees and in order that you may have some idea of the extent of the results of the efforts of the referees throughout the State, I want to introduce you to the referees according to their districts—Workmen's Compensation Districts:

District 1—Bucks, Chester, Delaware, Montgomery and Philadelphia Counties. Warren C. Graham and Charles W. Bosler.

District 2—Berks, Carbon, Lehigh, Northampton and Schuylkill Counties. Thos. C. Seidel.

District 3—Lackawanna, Luzerne, Monroe, Pike, Susquehanna, Wayne and Wyoming Counties. George W. Beemer.

District 4—Adams, Cumberland, Dauphin, Franklin, Fulton, Juniata, Lancaster, Lebanon, Perry and York Counties. Chester W. Cummings.

District 5—Bradford, Cameron, Centre, Clinton, Columbia, Lycoming, Mifflin, Montour, Northumberland, Potter, Snyder, Sullivan, Tioga and Union Counties. W. W. Champion.

District 6—Bedford, Blair, Cambria, Clearfield, Huntingdon, Indiana, Jefferson and Somerset Counties. Jacob Snyder.

District 7—Armstrong, Clarion, Crawford, Elk, Erie, Forest, McKean, Mercer, Venango and Warren Counties. G. Scott Smith.

District 8—Allegheny, Beaver, Butler, Fayette, Greene, Lawrence, Washington and Westmoreland Counties. L. E. Christley and Harry B. Henderson.

We have with us from the first district, Mr. Warren Graham; from the second district, Mr. Thomas C. Seidel; from the third district, Mr. George W. Beemer; from the fourth district, Ex-Mayor Chester W. Cummings (when he is not playing golf); from the fifth district, Mr. W. W. Champion. This I want to say has been our last and hardest district for one man to cover, not only in the large number of intricate cases, but in that great territory there is no one more able to do that work than Mr. Champion. From the sixth district, we have Mr. Jacob Snyder; from the seventh district, Mr. G. Scott Smith, and from the eighth district we have two referees, Mr. Christley, from Pittsburgh, and from Butler County, Harry B. Henderson; nine, Mr. Lewis, who is the assistant superintendent of public education in Luzerne County; ten, Mr. Gleason. I thought I would let you know they are all here.

I asked Mr. Graham to speak upon a question of very live interest to insurance carriers and employers, but Mr. Graham has been very busy and he wants to get out of it. But we have given him the order. Under our new act, of 1919, and the old Act, paragraph 307, section five, there is some conflict as to when $100 will cover the last sacraments and burial and when there can be an addition made to it. Mr. Graham is well qualified to explain these questions, and I take pleasure in presenting to you Mr. Graham.

MR. GRAHAM: Mr. Commissioner, Chairman, Ladies and Gentlemen: The subject Mr. Mackey has assigned to me does not involve a great deal of money, but it is one that requires a great deal of thought on the part of the referees in handing down their decisions. It is a subject of vital interest to the medical profession and every hospital in our large cities. Under the Act of 1915 there were two sections covering this point; section 306 relating to the case of the medical bills, which should be paid by the employers disabilty, and the sub-section 307 made by employers for medical expenses in case of death.

If we take those two sections and analyze them we find that they cover four subjects: First of all, they cover just what the employer is responsible for and section 306 which deals with the case of disability provides that the employer shall

be responsible for reasonable medical and surgical supplies furnished to the employee, and the section goes on and provides the period of time during which the employer is liable and under the Act of 1915, it was limited to 14 days.

The third point in the section is the financial limit which the employer can be called upon to expend and under the old Act it provided the limit of his liability was $25 and in the case of the performance of a major operation, $100. The section also goes on to say to whom those payments should be made and it provided that in case the services were furnished by the employer, sent him to the doctor or hospital, that the payments should be made to that doctor or hospital. In case, however, the employer failed to furnish the medical service, the act provided that the employee could go out and get that and he in turn would be supposed to reimburse all persons.

Section 307, liability of the employer in case of death contains different provisions. It provides first of all, what is the liability of the employer. It provdes that he shall be responsible for accidents, last sickness and burial. It provides, in the seconl place, the limited amount which the employer can be forced to pay and that limit is a fixed arbitration at $100 also provides to whom it shall be paid, and in case of death the payment shall be made to the dependents of the deceased and if he had no dependents, then to his principal representatives.

The amendment embodied in the act of 1919 makes some changes in the first of those sections. In the first place, it increases the liability to the employer. It broadens the subject matter which he must consider. It provides not only that he must pay the reasonable medical and surgical services but in addition to that, he must pay for hospital treatment services and supplies. It also worked a change in the length of time to be made. In place of the limit of 14 days as in the Act of 1915, the employers' act now extends to 30 days and it changed the limit from $25 to $100, depending on whether or not a major operation had been performed and that distinctly is wiped out entirely by the amendment act, which provides that the limit for reasonable surgical and medical services shall be a fixed limit of $100 and provides that the hospital treatment shall be compensated in this manner.

The employer shall be responsible for the prevailing charge in the hospital for like services to other individuals. To whom payments should be made remains the same by sending the man to the doctor or hospital, and in that case the award is to be made direct to the person making the service, but if the employer fails in that and the employee goes out and obtains the services, the award is to be made direct to the employee.

In considering this act, and the amendment, it has occurred to me that there will be several questions to the referees for consideration which will cause us considerable trouble. First of all, local interpretation, hospital treatment, services and supplies will undoubtedly arise in the near future, and I believe has and is in part before the board. It will no doubt be contended that hospital treatment included the services of the hospital, doctor, interne man as an employee and who performs his services as an employee, and it may be contended that the hospital surgeon should present his bill under that heading. It is important in this way that the provision for the payment of hospital treatment is in addition and stands apart from the payment of $100 for ordinary medical services and medicine. That question will be presented to us and we should give it some consideration before we are brought face to face with a decision and have some lawyer argue and ask us for our opinion.

The second question likely to arise, and one which will probably cause us considerable trouble, is not the question of law. The questions of law we can rely on the opinion of the board and be relieved of the responsibility. The second question is, I think, the question or fact we will have to decide on the merit of each par-

ticular case presented as to the prevailing charge of other individuals. Understand the act does not say we are to take from the employer the reasonable cost of hospital treatment, service and supplies. It does not give us that latitude. We are to be guided by the prevailing charges for like treatment to other individuals and it seems to me the prevailing charges in that particular hospital to the individuals brought in under the same circumstances and receive the same treatment. We are going to meet with cases where the prevailing charge is nothing, and the service is free, and we ought to give careful consideration to this at this time.

We are also going to meet another question of practice. We all agree we should administer the law wherever possible and satisfy the people. We want to convince the litigant that we are doing exact justice and that we are doing everything that the law calls for. The determination of the rights of the hospital under section 306 and 307 depend upon the life of the patient. If a man presents his claim under section 306 for disability, he gets a very substantial award. If he has expended $100 for medical treatment, he gets $100 for that service. If in addition to that he has expended money for hospital service, we make an award to him to cover the prevailing charge for the same service in the same kind of case in that hospital. Although we make the award to the man, it finally lands in the treasury of the hospital and the hospital is interested to that extent. In disability the award is substantial, but in case of death the hospital does not get very much.

Of course, in that case the award is made to a dependent or to personal representatives and the award must cover not only the medical services and the burial and is limited to $100. I think we referees should have that clearly in our minds, because we will have doctors and lawyers so that had this man lived, we would have collected $100 and now you want to give $100 to the representative and now he has to satisfy the hospital, the doctor and the undertaker.

Those are the three questions likely to be presented to us that appeal to me from examination of the act. The first, I believe, will be answered by the compensation board and we will be relieved of the responsibility entirely. Second, I believe we will have as long as we live, and are in the department, and there will be contention and argument and contradictory evidence as to the prevailing charges and we will have to do our best to find the true facts and make our awards accordingly. The last is public policy to perform not only legislative service and satisfactory service, but if we have in our minds a clear understanding of the law, we will be in position to explain and show fully to the litigant why we cannot give the man more money. I thank you.

MR. MACKEY: It has just come to me that in introducing the referees I made a great faux pas, not being accustomed to this particular job, and I gave him a nickname, and so we have a new departure in referees and I neglected to call attention to the fact that the Act of nineteen hundred and nineteen creating a supervising referee, giving him more powers and more money also than the rest. This is a very important office, and will be more important as we get into the administration of that act. Traveling referees and keeping in touch with other referees and render assistance and advice and be such a roving referee and handle any particularly complicated matter that the Board could assign him to straighten those difficulties, and Frank Feehan knows I did not overlook him. He is particularly competent.

I am not going to discuss doctor's fees tonight because if I did all the doctors in Harrisburg would be here in a few moments, and it would consume the rest of the night. The first year we had 100 cases and I had to answer them all, but the medical one is not going to be taken up for extended discussion, because when we provide this new act, we believe we enlarge the fees to take care of the doctors all over the State. I never attended a doctor's convention and I am not in position

to say. How are we going to get this money away from the hospitals? I thought we had answered that, but the doctors said not. We want a ruling that we can go into the hospital and get the money. The Attorney General said, "I am going to fortify the board with an attorney," because he approved this.

It founded an amendment number 316, and he being responsible for that amendment, I am going to let him break ground. For the rest, I will hurry along, and we will get to the matter of great interest, and that is we are going to let everybody ask questions and we are going to try to answer. We will next hear from Mr. Cummings, referee from Lancaster district.

MR. CUMMINGS: The administration of the Workmen's Compensation Act, of 1915, by the board and the referees, has been conservative and along sane lines, fully realizing, as real friends of the workers, that the claimant must meet the burden of proof by evidence that would be sustained in a court of common law, appreciating that no fictitious claims should be allowed just as the meritorious claims of the worthy should be protected and insured.

The first effort of a referee should be along the lines of conciliation and mediation, and only when patient persuasion fails to produce a compensation agreement should the parties be aligned against each other in a formal hearing. And, even then, much more is to be accomplished, in many instances by general discussion of the matters at issue, in an endeavor to arrive at the facts and to get down to "brass tacks," than by lumbering the record with a great mass of testimony, much of which is irrelevant and unnecessary.

The almost universal attitude of the employer is one of friendly co-operation, and I know of no better illustration of this fact than to relate my personal experience in connecion with the Baltimore tunnel disaster, which occured at Wilkes-Barre, on June 5, 1919. Together with Chief Adjuster, Mr. Harry Myers, I was assigned as a representative of the Workmen's Compensation Bureau, to aid in adjusting the claims resulting from that disaster.

There were 92 fatalities and 45 disability cases arising out of the same, and we were successful in securing compensation agreements in 69 of the fatalities, covering 56 dependent widows, 12 dependent parents, 138 dependent children and 8 post-humous cases, and one case of no dependents, covering only the funeral expenses. There were 12 alien dependency claims, which were referred to the custodian of alien property, to be taken up in due course; one case in which there were two children and no parents, in which a guardian had to be appointed; seven cases in which no history of dependents could be ascertained, and only three cases in which the employer took the position of requiring proof of the dependency of the parents.

Of the 45 disability cases arising out of the same disaster, 37 executed compensation agreements, five returned to work in less than 14 days, two refused to sign agreements, and one, whose injury was of such an extent that he was in no condition to execute an agreement, was not pressed at the time.

This was all accomplished within a period of one month from the date of the accident, and provided for the payment in compensation of approximately $325,000.00 in the dependency claims alone, exclusive of the agreements for compensation for disability, which, with one exception, provided for compensation at the maximum rate of $10.00 per week, during the continuance of disability.

You will more fully appreciate the volume of work done through the co-operation of the employer when you consider that practically all the people concerned were of foreign birth, and unable to speak the English language, and that these agreements were all executed without one cent of cost for attorneys' fees or any financial outlay whatsoever on the part of the injured employes and dependents.

One of the largest employers in the district which I represent, engaged in a

most hazardous line of work, has had but three claim petitions before the referee for decision, in the three years that I have been associated with the Department, and within the past two years has not had a single case to be so decided. During this time this company has paid out thousands of dollars to its injured employees and their dependents, under compensation agreements, all of which were adjusted amicably.

It is the custom of another large industrial establishment, located in my own county, to adjust all claims for compensation, due to injury resulting in the course of employment, at the rate of 75 per cent. of the actual earnings of the injured employee, from the date of injury to the time he is able to return to work, together with all expenses of medical, surgical and hospital treatment, regardless of the length of time the same may be necessary. The attitude of the insurance carrier has been also one of hearty co-operation, although possibly not always quite so generously or so promptly expressed as in the case of the several self-insured employers I have just cited.

The tendency of some of the adjusters, in what are apparently slight injuries, to delay the execution of compensation agreements and the payment of compensation to injured employees, until the party has returned to work, is in some cases most unfair, and is not in accordance with the benevolent intent of the law, and in many instances imposes a great hardship upon the injured party and his dependents. I feel that this delay or neglect is almost wholly due to the desire of the adjuster to close out a case with as little trouble to himself as possible, and is not in accord with the policy of the company he represents.

In order to more clearly show their attitude, I quote from a card of instructions issued to its claim adjusters by one of the leading insurance carriers, as follows:

"LEST WE FORGET"

(For all Claim Men)

.....

"Workmen's compensation insurance is a matter of grave concern to all the public.

"It will survive in private hands only if it continues to merit public approval.

"The workingmen themselves, through their political power, may eventually decide how compensation insurance shall be administered.

"Ultimately their influence will also be felt in the contest between mutual and stock companies.

"The workingman is entitled to the same courtesy and consideration we show his employer. In the final analysis he is the real 'assured.'

"The survival of our business, and the permanence of our livelihood, depend largely upon our treatment of compensation claimants.

"While it would be contrary to public policy to pay compensation to those clearly not entitled to it, EVERY JUST CLAIM SHOULD BE PAID IN FULL ACCORDANCE WITH THE BENEVOLENT INTENT OF THE LAW.

"Remember that we are dealing with SUFFERERS. Let them see that we are fellow human beings, that we sympathize with them in their misfortunes, and that at all times we recognize the humane as well as the commercial side of our business. Be helpful to them, and if in doubt give the benefit to the injured employee and his dependents."

In closing, I would say that the Workmen's Compensation Act of Pennsylvania has been in operation for four years. It has the approval of the capitalists as well as the workers. It is thoroughly American, modern and democratic. It has stood the test of public opinion.

MR. MACKEY: Commissioner Jarrett has not been with us long, but he is a man of keen perception, which he proved when he said that Solomon was the wisest man. One of the questions giving the courts the most serious consideration is inter-state commerce. We have not been in this work very long before it occurred to us that Congress, by the Act of 1909, provided a Federal compensation law for injured railroad men and had so invaded the soverignty of the State that the injured railroad man would not recover compensation under the State law.

When we first began our work there was two well-defined theories. The difference was so great we created a postponement calendar, and put all our cases on that calendar until the Supreme Court of the United States should have passed on that, and Supreme Court decided that Congress invariably did assume the extensive State authority, and therefore every time a railroad employee is injured the question arises was he injured in interstate commerce, and then our board early took the position that inter-state commerce be interposed as a division by the railroad companies, placing the burden of proof upon those carriers.

From one state to another and all the crew is connected with it, and even with one crew and the United States federal law approves, and I believe the true theory of evidencing that the burden of proof should fall upon the person who is in the best position to prove the accident, and therefore the railroad should be in position to have complete knowledge of its transactions and its records, as the railroad is engaged in interstate commerce.

Pennsylvania has sustained us in that position; has just handed down a final opinion. It was my duty to voice the opinion of the board, and Mr. Francis H. Bohlen went into the Supreme Court defending that opinion and the Supreme Court sustained his position, and the railroad companies have asked to take that before the highest tribunal in the United States. As Mr. Bohlen is so splendidly informed as to the problem of interstate commerce, I have asked him to address you. Mr. Bohlen.

MR. BOHLEN: Mr. Chairman, Ladies and Gentlemen: Before speaking I wish to add a word to what Mr. Mackey has said in regard to the advantage the State of Pennsylvania has gained in having Mr. Feeney as one of our referees—a man who has worked about the hardest of all for it, and felt it a terrible defeat. At that time the act proposed failed.

When the legislature was brought to a mood to accept the principles of compensation, the then Attorney General and governmental department, that that method of adjustment was adequate to pass upon between employer and employees, and as a consequence, the system of administration through referees supervised by a board which could act not only as a planter of the policies but also as a Court of Appeals was formed.

At that time it was novel. With the multiplicity of the industries of Pennsylvania, unlike Massachusetts, instead of being localized, were scattered widely through out the State, stood in a position different from other compensation States. Therefore the act was planted on a novel scheme, dividing the State into districts in which the referees were sent to investigate and make adjustments. And I may say that that improvement was well worth two years of waiting for; in fact many more years of waiting.

It has been extraordinary, the success with which that was attended. Not merely the satisfaction of adjustments to both of them, but the extraordinary efficiency of their efforts in reaching the adjusments without the necessity of actually bringing the case to trial before them. Perhaps that last feature has been not only in the cases that are adjusted, because that machinery is open, but the greatest work in our compensation is that of the referees in the State of Pennsylvania.

Mr. Mackey said that at the time our Act went into force there was great doubt as to whether Federal employers liability act did or did not completely cover the field, the accidents sustained by men employed by interstate carriers by rail as to render unpayable, to nullify the provision of the State compensation act. As Mr. Mackey said, in consequence of that doubt, all cases of that sort were placed on postponement.

The celebrated decision of Winfield versus New York Central was handed down by the Supreme Court of the United States. It returned the holding that the Federal act was explicit; that the State legislature covering that field was therefore of no effect. It was necessary for the board to take up the problem of the determining a question further involved. Admitting that in so far as the Federal act is applicable, it precludes State legislation. The question remains, how far do the acts of the United States apply or in Pennsylvania irrespective of the character of the employee, the State act still remains free?

At that time it will be necessary for a movement to point out proper construction of that act. Up to the time when the Workmen's Compensation acts became used in the United States, and any number of different States, the tendency was to hold every accident to be only inter-state in character. By that I mean an accident falling in the terms of the Federal liability act which required two things; not merely that the employer should himself be an interstate carrier by rail, but the employee should be engaged in interstate commerce.

The first act was a vote of absolute note. No one could question or doubt that Pennsylvania Railroad or Delaware Lackawanna and Western was not only a carrier by rail, but whose business was interstate commerce, but the second thing was as to whether the activity of the employee when injured was himself inter-state in character was a very different question, and one as to which all decisions were for a time and are still difficult to follow and to classify. But up to the time when the compensation acts were passed in the majority of the States the natural tendency, I think it, is a credit to the United States, which was remedial in its character, gave him far greater rights than the common law gave him to extend that act, and to give them the benefit of the law to construct if possible every activity interstate in its character.

But from the time these compensation acts came into force there was a distinct tendency the other way. The tide turns and the tendency on the whole now is in the United States Supreme Court to regard such activities if possible, as not being inter state, therefore, not being covered by a Federal employers' liabiliy and left free to State regulations.

In this connection, perhaps a fad of mine, but I want to criticize the use of the word inter-state. It is not necessary in order that an accident be in the Pennsylvania act that the employee shall be engaged in inter-state activities, unless he was engaged in moving inter-state freight. Everything is inter-state in that it is within the jurisdicton and power of the State of Pennsylvania which is not interstate by the moving in the Federal act by the Supreme Court of the United States or State Charters which have endeavored to foresee we control it.

Now, I want to say the statement of the change of the tendency is important because I want to point out the fact that some of the earlier decisions were rendered at a time when the tendency of the Supreme Court was toward including as interstate every activity that appeared at all related thereto, and two at least of our decisions, to which I wish to call your attention, I believe to be of doubtful authority. However, before I do this I would like to state briefly, as I see it, the statutes of the law as declared by the United States Supreme Court as it stands today.

The tendency is if possible to do what Judge Moskowitz used in an argument and used by Justice Williams to individuals the activities if possible; to assign it to the particular traffic movement which it belongs. If the service is one which can

be so assigned, as the services of an engineer, the services of a car inspector, the services of a repair man, a temporary repair, then he, as in the DeDonato case—the service of a watchman at a crossing—the one injured is flagging a particular train. If those conditions can be sworn while in temporary rest, en route, the nature of this service is determined by the nature of the traffic movement.

On the other hand, there are two classes of cases which is it impossible to say individualized activities. The first is when a man returns from the day's work, his work being over. His work being over where under the Act he has certain rights under the Compensation Act, while upon the premises of his employer since his presence is required coming and going; since his right depends upon his having been in service, as in the Ainy Winfield case the character of that right must depend upon the nature of the days work preceding.

It cannot be determined by the first or last or principal part of that day, but by the whole, and since through this case if any part of a traffic movement is inter-state, the whole is, and so if any part of the service is inter-state the whole of that day is inter-state in character, and the return from work is also inter-state in character.

Now, the second class or case is the class in which the activity is directed toward the physical instrumentality of a commerce which must be used indiscriminately by both inter-state or non-inter-state commerce, the rails or track, bridges which carries the tracks in case of electric railways. The wire and electrical equipment which carries the power over are it is propelled to draw the electric trains. Those are physical instrumentalities not used successfully for independent journeys but used indiscriminately by both classes of commerce from time to time, and in those all activity in any way conduces to the maintenance of such things in good order or the repair or extension of them while in use, the activity is held to be inter-state in character.

In fact, so far have been carried out in a recent decision of the Supreme Court they hold that a cook of a construction gang or repair gang, which was engaged in repairing tracks of inter-state carrier was so far contributing toward the instrumentality that his or her services were inter-state in character. But, and here I want to point out to you the change of attitude, and show that our board in failing to act, changing the trend of the Supreme Court decision, did not stand alone. There are two classes of cases, which at the time of the decision of the board were supposed to be within the authority of the principal case, are dealt with as to the maintenance of the railroad. Those were just the construction of buildings in connection with stations, etc. which are used in connection with traffic indiscriminate in character, impossible to individualize.

I think it was Minnesota, who refused to abide by a State law while engaged in building or repairing a part of a station—extending a station. The Supreme Court held that was not an instrumentality of commerce. The second class was the class of a case which dealt with repairs upon the equipment used in the traffic. Engines, cars which are used from time to time as occasion or need arise, inter-state commerce. It was supposed that the effect of the early decision of the Supreme Court required it.

The lower State Courts and the Federal Court held that if an engine was the principal used in inter-state commerce has been proved by its use or repairs were necessary in inter-state commerce, that repairs were marked by those uses, and that those engaged in repairing were themselves engaged in inter-state commerce, and upon that fact the case of Myers versus Philadelphia and Reading Railroad was decided. Very shortly after that the case of the railroad company versus Winters openly was handed down in which it was said that it was not the question of what had been done to that instrumentality, but what might possibly be done in the future or even what was actually subsequently done to that

instrumentality, bnt must itself actnally be in use. The repairs must be made or at least that the engine or car npon which the repairs were made must have been irrevocably assigned to inter-state service. The position of the latter decision is that the service must directly contribute to inter-state commerce.

It is not a matter of probability; it depends upon the service at the time. The character of the traffic at the time the service is rendered, and fnrther, if the worker during the course of a day has finished a job inter-state in character and is waiting for a new assignment, even though it is shown the next wonld have been inter-state, since the character of not what he has been doing, nor what he probably would be doing in snch a case, he is not engaged in inter-state commerce. Therefore, I believe it is doubtfnl whether our work as in the Bloominstead case would be decided as it then was. Their man having finished with inter-state work was returning on a hand car where he was to report for further orders. Was his connection with that inter-state work over or was he still inter-state, that jonrney being completed and waiting there at the station, even though the orders would have been inter-state, or wonld not have been engaged in Inter State Commerce? General Mackey decided a case, I think the Hancock case, in which it was alleged to a point from which in general all trains were made np for their forwarding to points ontside the State, Mr. Mackey holding that the markings which were on the car were not conclnsive of irrevocable inter-state consignment.

In the absence of this irrevocable consignment as the further jonrney carried on inter-state trip did not make the carriage of those cars an inter-state operation. That I believe to be thoroughly sonnd law. The Snpreme Court law of Pennsylvania has gone the limit in sustaining the power of Pennsylvania to legislate for their railroad employees in the State. In Reynolds versus the railroad, the Supreme Court has given to the compensation act a very broad interpretation and which has followed I believe the manifest trend of the United States Supreme Conrt in referring distinct proof with some inter-state activities.

The second point which Mr. Mackey has alluded to is the most important. The board very early held that where the railroad company interposed one defense even though it was an affirmative answer, while in inter-state work the burden rested npon the dependent railroad company to prove the facts which show that such activities were actnally inter-state in character. The plaintiff's claim is made ont so far as he is concerned by saying an accident falling in the terms of the Pennsylvania act. The Supreme Conrt of Pennsylvania says that the defendent, if he wishes to act, under the State law, has no right to act and mnst show the facts which are nnder the Federal act as constrned by the Snpreme Court of Pennsylvania, prove the facts which show the inter-state character of the operation. I mnst ask your pardon for going into these details, which are of more interest to the referees than to the body of the audience. I thank yon for yonr attention, gentlemen.

MR. MACKEY: The next speaker will be one whose activity and wisdom and energy and untiring efforts have been absolutely indispensable factors in making the work a success. Mr. Lee Solomon as secretary, is known as onr "system." If anything that goes wrong inside or ontside of the Department, we mnst refer it to him. There is no one connected with this work who has the work so thoroughly at is fingers end. He has pnt in three years' experience in the workmen's compensation work in Pennsylvania—the most intensive and splendid work. Therefore, it gives me great pleasure to present Mr. Solomon.

MR. SOLOMON: Ladies and Gentlemen, Mr. Mackey: I want to say that this is my first conference, and I hope you will be very indulgent with me as an amateur. In reviewing the administration of the workmen's compensation law for

the past four years, it may serve to some purpose to call attention to some of those radical changes in thought and method which the operation of this legislation has developed in Pennsylvania.

The success of the compensation law is beyond dispute. Whether its results be measured in terms of the dollar, or in the huge totals of its beneficiaries, there can be no question that it has given general satisfaction throughout the Commonwealth. It does not suffice, however, to judge its success upon those mere materialistic grounds, important as they are, and it is well to consider some other developments which have followed since the enactment of the legislation.

The reduction in the number of accidents is quite familiar and requires no citation of figures. This application of the Safety First movement, by placing a financial responsibility directly on the employer, was one of the chief arguments in behalf of this legislation and this contention has been more than justified.

The establishment of the Bureau of Rehabilitation has been a direct result of workmen's compensation legislation. It is interesting in this connection to call attention to the fact that while pride has well been taken in the huge millions the State has spent in the past century upon the public school training of its children, yet up to the present time only $100,000 has been appropriated for the education of the disabled bread-winner. While the State undoubtedly owes a duty to every child to provide an equipment for life's battle, yet there can be no question that the injured man must be likewise considered in our scheme of education of the future.

The workmen's compensation act has beyond doubt done more to produce a better relationship between capital and labor than any one law, or series of laws, ever enacted in this State. Formerly, capital had an almost complete distrust of labor, while labor's general attitude was to regard capital as heartless. While we are still somewhat removed from the millenium, yet it is easily apparent that no more radical change has developed through compensation than the production of a general spirit of co-operation between employer and employe. The legislation has directly impressed the employer with the thought that he is his brother's keeper, and it is but just to state that in Pennsylvania that he has in many respects fully accepted the responsibility. The employee has learned that his best friend in times of distress is the man for whom he worked, and it is to him he turns to-day for the assistance provided by law.

From the viewpoint of a layman, one of the radical changes developed by the workmen's compensation law has been the abolition of the jury system for the transaction of the wholesale litigation attendant upon industrial accidents. Prior to the enactment of the compensation law, the Orphans' Court provided the only large system of legal adjudication without juries in Pennsylvania. The compensation method has worked so well, that it has naturally developed the thought whether or not juries could be dispensed with in other matters of litigation to the advantage of the public. So far as the operation of the compensation act is concerned, however, it must be remembered that it is more or less an exact law, that its provisions have been clearly interpreted by Chairman Mackey and his colleagues, that their opinions almost without exception have been sustained by the Appellate courts, and, except in clear cut questions of issue, the general applications of the act are well understood by all employers and by the general run of the employees.

The compensation system, in its judicial aspect, is unique as one scheme of law in which the lawyer is a minor figure. This is cited with regret. While it has been stated that it is the intent of the act that the referees and the board should safeguard the rights of claimants, yet any system by which these officers sit as both counsel and judge is without equity. The very terms of the act, in providing for small weekly payments to the injured man, automatically bar many competent attorneys from representing claimants, and thus in many instances place a dual and frequently unwelcome responsibility upon the referees and board.

Were all claimants fully represented, there can be no doubt that the compensation officers would be greatly relieved. This condition has, however, produced another development, which, in the future may likewise be copied with possible advantage in other branches of the judiciary. The State, to-day, through the board attorneys, is providing counsel for claimants, and there can be no doubt that this service has proved one of the most satisfactory features of the present administration. With an experience of more than four years as a guide, it can be stated that in no instance has the employer ever objected to the State providing representation for the claimant, this method undoubtedly being preferred to one in which officers serve in the dual capacity of judge and counsel.

The compensation system is likewise unique in as much as it is conducted entirely without fees. Every facility at its disposal is provided without charge to the public. This not only includes the gratuitous representation by counsel, but all affidavits, examinations by board physicians, certified copies of decrees or parts of official records, and even the bound volumes of the decisions of the board and the courts are furnished for the public absolutely free. When it is recalled that there are certain fixed charges in almost every other branch of government, it can well be considered that the State presented a distinct innovation when it organized a tremendous scheme of administration which does not handle one penny of fees.

It must also be recalled in this connection, that the State is also providing a system of information clerks and adjusters who are likewise at the call of the public. When it is considered that a large number of the claimants under the compensation law are men and women of foreign extraction, who having been accustomed to exploitation under their native governments naturally are suspicious of any honest motives under ours, it can readily be appreciated what a wonderful service in real Americanization these agents of our system are rendering by establishing the confidence of these people in a square deal under the State government.

Returning to the subject of representation of parties, it is interesting to note that compensation offers an open field for any champion to enter its lists. In many instances, insurance companies have adjusters, and corporations have their welfare chiefs and sometimes their medical directors to care for their interests. On the other hand, it is interesting to note, that labor organization throughout the State are giving more and more attention to the representation of their members. If the present tendency continues, the day will not be long distant when every union business agent, in addition to his other duties, will look after compensation claims of the members.

The representation by doctors as counsel while a novelty is in a measure well-founded. As so large a proportion of compensation cases concern medical facts almost entirely, it can well be understood that the physician can often serve to splendid advantage by his thus participation.

Another interesting fact, suggested by the mention of the physician, is that the compensation system has to-day more direct contact with the medical fraternity than has any other branch of government, excepting of course the health departments, State and local. It is well understood that the enactment of the law forced absolute attention by the employers towards the reduction of accidents. In the same way by bringing like pressure upon the medical profession, compensation has in a practical manner blazed the way for improved methods for the treatment of the injured. While, of course, the importance of proper relief for the disabled workmen was never ignored, yet it can be safely stated that this law has taught the lesson of the economic advantages of proper assistance for the injured and that the medical profession and the hospitals are giving this subject more attention than ever before.

These are only some few of the changes which compensation has brought about in this State. Considering that the law is little more than four years old, it can

be readily agreed that these changes really amount to a peaceful revolution in thought and method.

MR. MACKEY: Ladies and Gentlemen: One of the unique features in connection with our workmen's compensation is, it is for the benefit of the injured and poor; we provide them with every facility for proving their claims from a medical stand point, and we also endeavor to see that there will be no imposition upon them. We have Dr. Walter H. Blakeslee, who is always present at the meetings of the board, and he is the one man who is ready and willing to go to his claimants, and when they are disabled, would give them an examination right there. We give him every opportunity, and the doctor's place is always there to give him a scientific examination, and he is just as ready to go before the referees and confer with them. We will all enjoy hearing from Dr. Blakeslee.

DR. BLAKESLEE: Ladies and Gentlemen: I, being one of the Aborigines, have this subject at four different angles. The man who gives treatment made following the injury—he attends him in his last illness. Still another phase is that of medical legal aspect. Now, as the medical attendant who first immediately sees a man side-tracked from activity, the first treatment administered should be the best, and the tremendous responsibility of doing the best in his power to favor a speedy recovery and a swift restoration of the party wounded to activity.

It has been my observation that generally speaking very good service has been rendered, but now and then I have run across cases where there have been infections of fingers extending over mouths, in my opinion due to faulty treatment. Even in a simple case of an infected finger, improper treatment makes it vastly worse. How much more so where the injury has been more severe, and the setting aside of tissue, and where the wound is not properly cared for, even where the doctor may know there is no money in it for him. With our amendment act that condition has been largely set aside, and there is a reasonable opportunity for substantial fees, and I think in that way the amendment act will be of tremendous value and will serve to cut down the period of disability, of many of our expenses, and will cut down the time of payment of compensation.

At the second angle, the professional man is called upon to report as to his findings and as to the man's ability to return to work. In many instances this gives considerable difficulty to the referee, particularly if the doctor is not acquainted with the man's work. They are very closely coupled together, and I believe, and I say from my 36 years of experience in the Division of Hygiene and Engineering, weighing machines to be safe guarding to the proper installation of sanitary conveniences in the work shop, and that, with my knowledge of medicine, has helped me to reach the above conclusions.

And, then, the next important angle is to administer the last rites and in many cases to prove death. The features there are nothing different from what any doctor would have to handle in any case of emergency, but they are the hardest type of emergency and require quick judgment and decisive action in order to prove death if possible.

The fourth angle is that of the purely medical legal angle. By that I mean where a medical man is called on to review the testimony taken before the referees or the board to carry away the testimony given and to carefully weigh the testimony given and to derive findings of facts or to assist the referee or board. This to me has been a very important function, and the most interesting function from a medical standpoint, and it has been a great pleasure to have been of service to the board and referees in this particular point.

It has been extremely gratifying to submit findings of facts, and to have been incorporated in the records with no corrections, and having no legal knowledge, I found the task rather difficult at first, but as I mingled with the legal profession

and watched their methods of procedure, it became a process of copying. By using the dictation and my common sense, and what little medical knowledge I could acquire, I feel very grateful to think I could meet that burden. With that thought I wish to express my gratitude to the referees and board for the confidence they have imposed in me, and will sincerely appreciate their calling on me at any time.

MR. MACKEY; I have noticed in all conferences where Mr. Connelley has presided, he has urged all the various bureaus to become familiar with the doings of other bureaus, so there would be prevailing throughout the bureaus a general idea of what the other fellow is doing, and I want every referee to hear briefly an outline of the State bureau from Mr. William H. Horner, from his first report to his final report.

MR. HORNER: In rough figures we have had 150,000 accident reports, and 60,000 receipts covering compensation payments, petition for modification, termination. review and commutation, and these are received by the bureau annually, and in order to expedite matters, we have a bureau routine. Accidents are reported when received, then sorted, fatal, non-compensible cases, disability 10 to 14 days, and less, as the case may be, and where the report shows disability more than 14 days, and where the supplemented report is incomplete or not given. They are dated on receipt and given a number. Before filing is given a number and investigated, on a white card three by five inches. That carries the number of accident; name and address and date of accident, and the date card was received, and the code number which is an indication as to the name of the company carrying insurance on which the company is served insurance.

After the cards are made up the supplementary report is mailed to the employer as the case may be. Accident report is passed on to the coding for the purpose of punching them and the accidents sustained are then tabulated. Each day we furnish the system bureau with everything received, and also a short form report of all serious accidents.

The inspection bureau makes an inspection as to the cause of accident, and also to see if safe guards cannot be installed to prevent a recurrence in future. The reports are then turned over to the accident division. Cases where accidents are noncompensable, less than 10 or 14 days, are filed in enclosed file and we have a suspense file where also are incomplete records.

As supplementary reports are received, we place them in proper file awaiting the arrival of agreement for compensation. If we do not receive an agreement within 60 days, we at once send notice to the employer or insurance company. If after 30 days we do not receive an agreement, we send a second request, and as a final thing, we notify the employee as to his rights under the law, and if nothing is accomplished by that he is eventually advised to file a petition.

When agreements come in they are receipted, a folder is made and passed to the clerk who passes on the approval of their agreement. If he finds they correspond and warrant the approval of the agreement it is stamped on the date on which it is approved, and notice of approval sent to employer and employee. The case is then filed in our agreement division awaiting arrival of receipts for the payment of compensation. They must be filed quarterly, rather every three months. The case is then held in our agreement file until final receipt is received indicating that disability is over, and the case is then filed to the statistical division showing the amount paid.

As the complainants' petitions are received, they are assigned to the referees in the district court unless directed otherwise by the parties concerned and is supplied in complaint file until report is received from referee. If an appeal is not received in 10 days, it is placed in the agreement division without payment of com-

pensation as decedent by the referee. All petitions for commutation and review are transferred to the board and as they are received are turned over to the secretary's office.

We also have an adjustment bureau with four adjustors in the field, and this is, I believe, the weakest field now. Many cases that find themselves in the referee's office could be adjusted if we had the number of adjustors we should have to carry out that part of the work. We also have a tabulation system up to the minute. We can give you at any time any statistical information as to accident reports or compensation payments. We keep a docket of all petitions so that I feel safe that in our statistical division we can give you information up to the minute. I might go into more detail, but I think I have given you sufficient data to give you an insight to the work done by the compensation bureau. I thank you.

MR. MACKEY: We also have in connection with our work a legal bill. Mr. Bohlen is chief counsel and assigned to the Pittsburgh, Youngstown and Scranton district; he is here from his Philadelphia Office, and Mr. Price. Early in the administration of this act we saw the necessity of securing compensation to the injured man without any cost at all. There were many cases where the intervention of an attorney was very useful. It was a great aid to have skilled counsel, but it was so meager that it is very unfair to the widow and children of the injured man to be compelled to employ an attorney and we have therefore inaugurated our attorney system and it is very successful, and it comes out very splendidly particularly in our Philadelphia office. We have there Mr. Price, and I regret that I did not assign to him the subject of a recital of some of his experiences in giving aid and assistance to those seeking compensation. But inasmuch as this was a referee's meeting, I gave Mr. Price a subject in which all the referees will be interested, and that is when an accrued compensation becomes a part of the decedent's estate. Mr. Price.

ADDRESS.

BY ISAAC M. PRICE, ASSOCIATE COUNSEL, WORKMEN'S COMPENSATION BUREAU.

I have been requested to discuss before this conference the question:

"Whether compensation accruing to an injured employee under the workmen's compensation act of 1915, but not paid to him during his lifetime, becomes upon the death of such employee payable to his personal representative, or becomes extinguished and all future rights to compensation become vested in the dependents of the deceased."

To a proper understanding of this question, it is necessary to call to mind the provisions of the workmen's compensation act of 1915, bearing upon it. Section 307 provides, "in case of death, compensation shall be computed on the following basis and distributed to the following persons." Then follows the persons referred to, their relationship and the percentages to which they are entitled, but it may be sufficient for me to call attention to the fact that personal representatives and heirs are not mentioned or referred to except under paragraph nine of this section, where it is provided that the expenses of the last sickness and burial not exceeding $100 shall be payable to the dependent, or if no dependent, then to the personal representative of the deceased.

Section 306 F, however, provides that should the employee die as a result of the injury, the period during which compensation shall be payable to his dependents under section 307 shall be reduced by the period during which compensation was paid (note that it doesn't state payable) to him during his lifetime. Should the employee die from some other cause than the injury, the liability for compensation shall cease.

Please note that while the legislature had in mind the possible event of the employee's death, it nowhere makes any provision for payment of compensation to the personal representative or heirs of the deceased, but on the contrary does provide that the period during which compensation shall be payable to the dependents under section 307 shall be reduced only by the period during which compensation was paid, not accrued or become payable, but was paid to him during his lifetime; thus evincing an intent that all compensation not paid to the employee during his life, the right thereto accrues not to the personal representatives or heirs, but to the persons mentioned in section 307, in their respective relations to the deceased.

Therefore, in the absence of any provisions in the act, for the survival of the right of compensation accrued, but not collected by the deceased during his lifetime, that right is wholly unprovided for, and, therefore, according to the well established rule of common law, expressed in the latin phrase "Actio personalis moritur cum persona," such a cause of action dies with the deceased.

Sometime ago, at the request of the chairman of the Workmen's Compensation Board, I made an exhaustive examination of the law upon this subject, and made a brief of many cases on this subject, as herein endeavor only to give a brief synopsis of the most important and most conclusive cases.

1 Cyc. p. 49: The question whether an action survives depends upon the nature of the action, not upon the form of it.

1 Cyc. p. 60: Personal action. At common law and in the absence of statutes to the contrary, a purely personal action comes within the maxim "Actio personalis moritur cum persona."

1 Cyc. p. 688: The authorities all agree that no action for damages for an injury to the person which results in death will lie, except by force of statute, on the well settled principle that a personal cause of action dies with the person.

Using these principles of law as a foundation, the cases were examined and classified as follows:

1. CASES DECIDED BY OUR HONORABLE BOARD AGAINST TAKING BY PERSONAL REPRESENTATIVE.

GALBRAITH V. PA. R. R. CO. 3 Dept. Rep. 3562.

This was the first case before our board where this question was raised. The claim was made by the parents as dependents. The referee found against the parents as dependent, but awarded compensation for 18 weeks for the period intervening between the accident and the date of the death. The decision of the referee was appealed by both the claimant and the defendent. Commissioner Scott, in rendering the opinion of the board, said: "We therefore conclude that the right to installments of compensation on account of an injury suffered in the lifetime of the injured employee, and not collected by him are extinguished, and further, that there is no right in dependents to collect the same. Therefore the award made by the Referee is modified in so far as the defendant is directed to pay the sum of $90 for disability suffered by deceased employee in his lifetime.

TROUT v. *PA. R. R. CO.* 4 Dept. Rep. 5.

In this case also the parents claimed compensation as dependents. The Referee found they were not dependents, but awarded compensation to the heirs of the deceased for disability before death, covering the period from the date of the accident to the date of death. Board reversed the Referee and set aside the award.

DIXON v. FRY. 4 Dept. Rep. 479.

This was a case where the injured employee had filed his claim for compensation prior to his death and his claim was denied. Upon his decease, his counsel asked leave to file a formal suggestion of his death, and to offer further proofs in relation to the subject matter. Chairman Mackey refused the request saying, "This is an action because of an alleged injury suffered by the claimant during his lifetime. It has been determined that he had not proved his case. Therefore, it would be impossible for this claim petition to be in any better position after the claimant's death than before."

In this case it was also contended that the acts of Assembly of 1851 and 1855 provided for the substitution in the case of death of the plaintiff in a suit brought to recover damages for personal injuries, and providing for the institution of a suit when death has occurred, before any action had been brought, and further providing as to the persons entitled to recover. On this point the Chairman said, "It will be noticed that both the acts of 1851 and 1855 deal with actions in trespass and can have no bearing upon nor control over the workmen's compensation act of 1915, which is not based upon tort, but provides for compensation during the contractual relationship that has been established between the employer and the employee." "Furthermore the workmen's compensation act itself doesn't extend the benefits of its provisions to the personal representatives of a deceased."

II. CASES CITED AND RELIED UPON BY THE WORKMEN'S COMPENSATION BOARD IN THE THREE PREVIOUS CASES DECIDED BY THEM.

MICHIGAN CENTRAL R. R. v. FREELAND—227 U. S. 59.

This is an action under the employer's liability act of 1908, as amended by act of 1910. Inasmuch as section nine of the amendment of April 5, 1910, expressly provides that "any right of action given by this act to a person suffering injury, shall survive to his or her personal representative for the benefit of the surviving widow, or husband and children of such employee; and if none, then to such employee's parents; and if none, then to the next of kin dependent upon such employee." It will be seen that any right of action vesting in the personal representative of the injured employee, is expressly authorized by this act, and expressly stated to be for the benefit of the surviving window or husband and children of such employee, and if none, then to such employee's parents, and if none, then to the next of kin dependent upon such employee.

The Court then says, this cause of action is independent of any cause of action which the deceased had, and includes no damages which he might have recovered for the injury if he had survived. It is one beyond that which decedent had, one proceeding on different principles. It is a liability for the loss or damages sustained by relatives dependent upon the decedent, a liability for the pecuniary damage resulting to them, and for that only. It has been construed not as operating as a continuance of any cause of action which the injured person would have had, but as a new and independent cause of action for the purpose of compensating certain dependent members of a family for the deprivation pecuniarily resulting to them from his wrongful death; a totally new action is given, new in its species, new in its quality, new in its principle, in every way new, and which can only be brought if there is any person answering the description, widow, parent or child who suffered pecuniary loss because dependent upon the existence of a right in the decedent immediately before his death.

WASNEAK v. BUFFALO GAS CO., 161 N. Y. S. 675.

In this case the personal representative of the deceased employee endeavored to recover the full amount of the award after his death, on the ground that the commission had awarded compensation for 128 weeks for the loss of an eye, and that he had been paid only for 25 weeks, and therefore the other 103 weeks were due his estate. The court in reversing the commission said:

"An award which extends the payments over a period of 103 weeks does not make the aggregate sum due either at the time of making the award or at the death of the claimant within the period of 103 weeks." "The legislature did not understand that the award became vested so as to be due at the death of the claimant, or at the date of award became vested so as to be due at the death of the claimant, or at the date of award but that the award was for a certain sum per week." The defendants urged that the claim terminated with the death of the claimant, and the court sustained that claim.

LAVIN v. WELLS BROS. CO., 112 N. E. 271.

This was a proceeding under the compensation act of Illinois, brought by the administrator of a deceased employee. The arbitrators found for the administrator and ordered compensation to be paid in equal weekly installments of $8.61. The defendant appealed. The Appellate Court dismissed the appeal. The case was

taken to the Supreme Court. The Supreme Court decided, "The statute provides that upon its acceptance its provisions should be regarded as part of the contract of hiring, and that the measure of liability of the employment for an injury shall be determined according to the provisions of the act. The liability is a contract liability not different in its nature from any other liability arising out of contract. The judgment of the appellate court was reversed."

In the case of Michigan Central v. Freeland, and of Wasneak v. Buffalo Gas Co., the court decided that there was no power vested in the commission to make an award for compensation for the remaining weeks, for the reason that compensation was provided to be paid not in one sum, but periodically, and that there was no justification in the statute for stating that any sums were due under such award except such as might have accrued at the date mentioned, and stated further that the statute making a radical innovation upon the common law, has provided a sum of compensation for workmen in certain classifications of labor, but not only is it impossible to conceive of compensation after death, but the statute itself makes the distinction between the compensation which is to be paid the employee, and the benefits which are to flow to those who are dependent upon it in the event of death, and provides distinctly who shall receive the benefit.

III. CASES WHERE THE QUESTION OF SURVIVAL IS DISCUSSED.

FULGHUM v. MIDLAND VALLEY R. R. CO., 167 Fed. Rep. 660-664.

This was an action under the Federal employer's liability act. In the declaration were two counts:

1. For the benefit of the estate of the decedent for pain, suffering and physical injury up to his death.
2. For the benefit of the surviving widow and children.

The court said, "In the opinion of the court the right of action given to the injured employee by the Act of 1908 does not survive to his personal representative in the event of his death, but as at common law, perishes with the injured person." And it was added that this is in harmony with the known purposes of the act, which was intended to make some provision for the unfortunate man and not make provisions for the creditors of his estate.

LOUISVILLE, EVANSVILLE & ST. L. R. CO. v. CLARKE—152 U. S. 230.

"The statute does not profess to revive the cause of action for the injury to the deceased in favor of his personal representative, nor in such its legal affect, but it creates a new cause of action unknown to the common law. The right of compensation for the bodily injury of the deceased which dies with him, remains extinct."

In re: *CARTER, 9 N. C. C. A.* p. 596 Illinois.

In this case the court ruled, "compensation remaining unpaid at the time of the death of an injury in the case of such death abates, that is to say, the language of the act refutes the theory of such deferred payments becoming vested and hence part of the estate of such deceased."

IV. CASES WHERE THE RELATIONSHIP OF THE PARTIES UNDER STATUTORY PROVISION IS DISCUSSED.

STATE OHIO & INDUSTRIAL COM. 13 N. C. C. A. 713 Ohio.

In this case the injury to the employee resulted in the loss of his three fingers for which he was entitled to compensation for a period of 20 weeks. He subsequently died from peritonitis, which it was decided was not in any way caused by the injury.

He received no compeusation during his lifetime. At his death widow made application for compensation for 300 weeks, but withdrew that claim and pressed her claim for the unpaid 20 weeks of compensation which had accrued during his lifetime. The defendant claimed that the death of the employee terminated the liability to make payments on account of the injury to him. It was also claimed that the widow had no right to assert a claim for compensation that accrued prior to the death of the deceased.

SCHOENREITER v. QUINCY MIN. CO.,—13 N. C. C. A. 723 Mich.

The Michigan board said that the employer was liable for the compensation accrued prior to the death of the deceased. In its decision, the board said: "In the opinion of the board it is the purpose and meaning of this provision of the law that the right to specified indemnity in case of the loss of a member is one that is for the personal benefit of the injured man, and that it is a right peculiar to himself and not created for the benefits of his dependents. The same section, however, provides that in case of the death of the injured man as a result of an injury, that thereupon the right to compensation shall arise in favor of his dependants for the amount specified, and we are also of the opinion that the right to an order for the payment of this compensation ceases with the death of the injured man; that the employer is liable for the payment of the compensation that accrued prior to the death; compensation which had accrued prior to the death of the deceased was his property as if it had been paid over to him, it was money owing to the injury at the time of his death, and it seems to stand upon the same basis of wages that he had earned and had not yet received. We have corrected this. The proper course would be for the administrator of the deceased to make demand for the money owing by the employer, and recover the same if necessary, in a court of competent jurisdiction, where the question of the set off claim by the employer should be litigated, while exemption of the compensation money from garnishment and for liability to credits may be personal to deceased. It would seem that under the circumstances in this case that no award can be made to the plaintiff, who is the widow, the proper party to receive the money being the administrator." (It will be noted this was the decision by the Accident Board of Michigan under the Michigan Law.)

V. AUTHORITIES WHERE WORKMEN'S COMPENSATION PROCEEDURE IS DISTINGUISHED FROM THE ORDINARY ACTIONS AT LAW.

1. Cyc. p. 922. Whenever a statute gives a remedy which must be instituted and conducted in a manner different than that prescribed for actions at law, it is a special proceeding.

1. HONOLD ON W. C. Sec. 203. This legislation is usually substitutional rather than supplemental or cumulative, and therefore exclusive of other statutory and common law remedies, so that where the parties are subject to a compensation act, all their rights arising under it are to be settled by the agencies there provided and not as in action at law.

IBID in Sec. 209: A proceeding under the compensation act is not a proceeding at law, and is not altogether covered by the rules of legal proceedure. Where the act is adopted by the parties, a relation arises between the employee and the employer under which in the event of personal injury to the employee there is to be speedy ascertainment of the new kind of compensation created by the act.

BAUER v. C. T. C. P. ESSEX CO.—Supreme Court of N. J. 95 Atl. R. 627. In this case the court said, "it will not be out of place to call attention to the fact that the proceeding of the act of 1911 is one unknown to the common law and clearly in derogation of it. It can hardly be said to fall within the classification of any of the actions numerated in the statute, and contemplated by the legislature. The proceeding is neither an action upon contract nor one of tort, but rather what the statute creating it makes it, that is, a proceeding to enforce a statutory duty or obligation arising out of the relations of the parties, the basis of which is a contract expressed or implied."

YOUNG v. DUNCAN—Supreme Court Mass. 106 N. E. 1. "The purpose of this act was to substitute a method of accident insurance in place of the common law's rights and liabilities for substantially all employees, except domestic servants, farm laborers, etc." "It is manifest from the tenor of the whole act that its adoption and use throughout the Commonwealth by all who may embrace its privileges is the legislative desire and aim in enacting it. The act is to be interpreted in the light of its purpose, and so far as reasonable may be to promote the accomplishment of its beneficent design. If the parties are subject to the act, then all their rights arising under it are to be settled by the agencies there provided and not as in actions at common law."

DE BIASI v. NORMANDY WATER CO. (Appeal to U. S. Court from N. J.) 228 Fed. 234-238. The scheme of the workmen's compensation act is two-fold compensation through action at law, by the legislative schedule. The latter prevails unless parties have taken the step prescribed to put the other in operation. It follows, "the employee could not have recovered damages in common law action for any injuries he might have sustained in the course of his employment if he had survived. The only moneys recoverable would be the compensation prescribed. These limitations upon the employee's right to recover, control the right of recovery by his personal representative in case he died as a consequence of such injuries. The personal representative must find his right, if any, to secure compensation in said compensation act."

The preceding cases seem to establish beyond peradventure the following propositions:

1. That in all actions to recover damages for personal injuries the common law rule "actio personalis moritur cum persona" prevails, except where by some statute it is provided otherwise.
2. That where any statute is in derogation of or an innovation upon the common law, the wording of the statute must be relied upon and strictly adhered to.
3. That a proceeding under a workmen's compensation act is not a proceeding at law, and is not altogether governed by the rules of legal proceedings; it is neither an action upon contract nor one of tort; but rather what the statute creating it makes it; that is a proceeding to enforce a statutory duty or obligation arising out of the relations of the parties, the basis of which is a contract expressed or implied. And that the provisions of the statute must be followed, and nothing can be supplied, added to nor omitted from it.

Therefore, since the workmen's compensation act of 1915, does not provide for the survival of the action, or proceedings, created in behalf of an injured employe, but rather negatives such right in the provision contained in Section 306 (f) as follows:

"Should the employe die as a result of the injury, the period during which compensation shall be payable to his dependents, under Section 307, shall be reduced by the period during which compensation was paid (not payable) to him

during his lifetime," it may be safe to conclude that the right to recover compensation accrued during the lifetime of an injured employe, but not actually paid to him, does not survive but is merged in the rights given his dependents under Section 307, subject only to the deduction provided for under Section 306 (f) and that if there be no dependents the right to recover the compensation accrued for the injury, and not paid during decedent's lifetime, becomes extinct, for the reason that the act makes no provision for the survival of the right to recover, but does provide for the payment of the same to dependents if there be any entitled thereto.

MR. MACKEY: We have one more paper, and then we are going to open this question box. We had the referees send in questions, and they are here on the table, and after Mr. Champion's paper we will open the question box and answer some of these questions. We will now hear what Mr. Champion has to say.

SOME LEADING CASES UNDER THE PENNSYLVANIA WORKMEN'S COMPENSATION ACT.

BY W. W. CHAMPION, REFEREE, WORKMEN'S COMPENSATION BUREAU.

The learned chairman of the board, through his diligent and efficient secretary, has commanded me to prepare a paper on some phase or phases of the compensation act, but unfortunately left the selection of the subject matter to me. I have frequently wagered that with pencil on paper I could write a readable paragraph on any designated theme, or beginning with a specified word or even letter and have carried through the bluff even when someone suggested that it begin with a "z." But I confess that I have been hard-put to it by the short notice coming at a too busy time.

Hamlet-like, I have been "lost in a sea of indecision" over a too wide range of subjects and an insufficient amount of subject matter. I have however, undertaken to too briefly chart the course of our Superior and Supreme Courts in their interpretation of the Pennsylvania Workmen's Compensation Act of 1915, a rather well turned piece of legislation as the board has blazed the path and the Courts by their interpretations have made permanent the way.

May I not say in passing, that as referees we are under great obligations to the members of the board for their courtesy, helpfulness and outstanding support in every possible way and to the extremest possibility of honor. They have never refused to "sustain the referee" when the record made it humanly possible for them to do so. "When the findings of fact of the referee are approved by the board," even the Supreme Court recognizes that an irrisistible force has met an immovable body," consequently there is nothing doing, for "the findings of fact and conclusions of law of the referee, approved by the board are final"—Poluskiewicz vs. P. & R. C. & I. Co. 257 Pa., 305, 1 Mackey, 18. Thus, frequently preventing irreparable injury to our referrish esteem, and not so infrequently to the great engagement of the size of our high-priced Stetsons, when, perhaps, a bit less of sympathetic attitude on the part of the board would have been a very present help in keeping our feet on the ground, our eyes to the fore, our noses in the reports and our safety valves the more ready to "pop." "Spare the rod of appeal and spoil the referee," may we paraphrase, without having our next one knocked into the limbo of a cocked hat.

In Anderson vs. Carnegie Steel Co., 225 Pa., 1st Mackey, page 15, Chief Justice Brown found no difficulty, whatever, in sustaining the constitutionality of the workmen's compensation act of 1915, notwithstanding a young friend of mine, of high legal attainments and very considerable luck in the trial of causes, said to me shortly after the act went into effect, that he "could drive a dozen ox teams through it." I opine, that 10 years prior to the delivery of Mr. Justice Brown's opinion, the court itself would have found ways to drive a dozen ox teams successfully through such remedial, social legislation, showing that even our courts of last resort are amendable to public opinion. What chance pray you, have the proponents of the 18th amendment.

As we view it, McCauley vs. Imperial Woolen Co., 261 Pa. 312, 1st Mackey, 25, is the outstanding case of the interpretation of our compensation act, and is well worth the careful study of students of our compensation laws. It is quoted repeatedly by our courts, by the board and on occassion even by the referees.

Justice Von Moschzisker, speaking for the court, took this opportunity to "make a rather minute examination of the Act of 1915, and to fully discuss the relative duties and jurisdiction of the compensation board and the courts thereunder," he says in Messinger vs. Lehigh Valley Railroad Company, 1st Mackey, 24, and, "that section 409 of the Act of June 2nd, 1915, P. L., 736, provides that 'The Board's findings of fact shall in all cases be final.' This purview comprehends all instances where the board either adopts the findings of the referee or makes its own findings after a hearing *de novo;* and as recently ruled in Poluskiewicz vs. P. & R. C. & I. Co., Supra, if the board errs in its findings the, "courts can grant no relief."

The McCauley case is the famous anthrax case, wherein referee Klauder's award was overruled by the board and the board's position sustained by the Philadelphia Common Pleas, the Supreme Court overruling the court and the board and sustaining the referee. In this it is not unlike Marsh vs. Groner, 1st Mackey, 20, decided by Referee Houck, now Mr. Commissioner Houck, in the salad days of our act, when each referee was a law unto himself until reduced to order by the board. Anent this matter of appeals, while we, the referees, have not split 50-50 with the board, we have done fairly well in our "guessing at the law." Someone, you know, says the finding of an Appellate court is the opinion of the man having the last guess.

But to return to our muttons and to brifly summarize the opinion of the Court in the McCauley case, we have:

1st. That the W. C. Referee is an official of the board, vested with definite duties and powers; all records made by him belong to the files of that body. Before the board can reverse on a question of fact it must grant a hearing *de novo* and substitute its findings of fact and conclusions of law for the findings of the referee, when an appeal is based on an alleged error of fact; but when an appeal is based on an alleged error of law the board must act solely upon the record of the referee and may either sustain, reverse or modifly the latter's final order.

2nd. When the evidence before the referee was insufficient in fact to justify his finding, the appeal is based upon a *question of fact;* but where the ground of appeal is that there was no legal or competent evidence before the referee upon which his findings could have been based, the appeal raises a question of law.

3rd. On a hearing *de novo*, the deposition taken by the referee, may, by agreement of the parties, be accepted by the board as proofs in the case, either for the purpose of finding its own facts or formally adopting those found by the referee; but on a hearing solely to determine a point of law, the testimony has no place in the consideration for the purpose of finding new facts, because those found by the referee, being unappealed from, are final.

4th. Altho appeal has been taken upon an alleged error of fact, the board, if the case warrants it, may treat it as an appeal, alleging an error of law.

5th. An appeal from the workmen's compensation board to the court of common pleas, is in the nature of a certiorari, and is limited to a mere inspection of the record to ascertain whether the judgment in question is in conformity therewith, or to see whether the tribunal which rendered judgment either exceeded its jurisdiction or abused its discretion.

6th. On appeal from the Board to the Common Pleas, the notes of testimony taken before the referee or the board are not a part of the record.

7th. The remark of the deceased (McCauley), as to the cause of the mark on his neck, is hearsay, and standing alone is insufficient to sustain a finding that he met with an accident in the course of his employment; but circumstantial evidence in the case and the competent and relevant parts of the expert professional testimony were sufficient to support a finding.

8th. Referees and the board in their hearings and investigations are not bound by the technical rules of evidence, but the rule which forbids the making of material findings on hearsay alone, is more than a technical rule of evidence. After all the data has been gathered without regard to techuical rules, the proofs must be examined and that which is not evidence, within the meaning of the law, must be excluded from consideration, and the findings must rest upon the relevant and competent evidence of sound probative character, either circumstantial or direct remaining.

9th. The workmen's compensation law of 1915, contemplates injury by accident only and not occupational diseases.

10th. It is not necessary that an injury in order to be accidental shall have been caused by force externally applied or by some tangible substance of material size. The words of the act are "violence to the physical structure of the body," and not "injury to the physical structure of the body" by external violence. If the accident giving rise to injurious results complained of can be properly classed as a "mishap"—"or fortuitous happening"—"an untoward" event, which is not expected or designed—it is an accident withiu the meaning of the statute.

11th. When death results from germ infection, the case is within the workmen's compensation law only if the disease in question is the sudden development for some abrupt violence to the physical structure of the body, as defiued above, and not the mere result of gradual development from long continued natural dangers incident to the employment of the deceased person, as in cases of occupational diseases the risks of which are voluutarily assumed.

The McCauley case has, as you see, fairly well delimited the scope of the workmeu's compensation act and of the powers and duties of those concerned with its enforcement.

In the second place, I would put Dzikowski vs. Superior Steel Co., 259 Pa. 578, 1st Mackey, 38, with the facts of which you are all familiar. The employe was handling greasy iron and while awaiting the arrival of more material he struck a match supposedly against his greasy trousers, and was burned to death. May I not recall in this connection, that in its decision in this case the Supreme Court sustained the award made by the late Referee Thomas J. Dunn, whose zeal in the cause, I feel, was his undoing. The board had sustained the referee and the Allegheny Common Pleas reversed. As the McCauley case largely established the procedure under the act, the Dzikowski case in no small measure determined its scope and brought it on all fours with the English act, to which we are so often indebted for authority. As Chairman Mackey has frequently pointed out, our act is the first of the compensation acts to omit from its phraseology the words "Arising out of the employment," substituting the much broader concept, "in the course of employment."

In deciding the case at bar, Mr. Justice Potter said: "What we regard as a sound statement of the principle involved appears in 1 Hennold, on workmen's compensation, Section 111, where it is said: 'It cannot be said that the employment here is broken by mere intervals of leisure, such as those taken for a meal. If an accident happened at such time there would be no break in the employment even though the workman is paid by the hour for the time he is actually at work, especially if the accident occurred on the employer's premises or about his property, unless the workman is doing something that is wholly foreign to his employment. Acts of ministration by a servant to himself, such as quenching his thirst, relieving his hunger, protecting himself from excessive cold, performance of which while at work is reasonably necessary to his health and comfort, are incidents of his employment and acts of service therein within the workmen's compensation act and they are only indirectly conducive to the purposes of his employment."

"Consequently no break in the employment is caused by the mere fact that the workman is ministering to his personal comfort or necessities, as by warming himself or seeking shelter or leaving the work to relieve nature, or to procure drink, or refreshments, food or fresh air or to rest in the shade." * * * "Nor do we regard the fact," says the court, "that the accident resulted from his striking a match for the purpose of enabling him to smoke at that time and place as being sufficient to debar him and his dependents from the benefits of the statute. It is not unreasonable for a workman to smoke out of doors during intervals of work where it does not interfere with his duties.

"Dzikowski, was, of course, negligent in striking the match on his oil soaked clothes, but under the workmen's compensation act of 1915, contributory negligence on the part of the workman is not a defense. The employer is liable for accidents in the course of employment except for injuries "intentionally self-inflicted or caused by an act of a third person intended to injure the workman for reasons personal to him."

At the time this decision was handed down, it appeared to me that, if this quotation was Hornbook law in the interpretation of our act, it was much more all-embracing than those engaged in its administration had up to this time contemplated.

The Dzikowski case has, indeed, had a marked effect on our Pennsylvania law, and, perhaps, ultimately on those of other states that have followed in the wake of Pennsylvania's splendid remedial legislation. Personally, I was long in realizing that this quotation was more than an obiter dictum on the part of Mr. Justice Potter; but it has since been cited with approval by the board and the courts and in the recent case of Blouse vs. D. L. & W. R. R., 2nd Mackey, 74, Mr. Justice Keller cites with approval the entire excerpt. It is the "father and the mother" of many subsequent decisions of the board and of the courts for a line of cases happening on the premises during the noon hour or while the employe was engaged in play, etc. These more recent noon-hour and play-cases have marked a distinctive advance on the part of the board and a reversal of its position held in some of the earlier cases such as Tomkaska vs. Steel Car Co. Decisions of the Board, 1916, page 151.

It seems meet to us to give third place to Gurski vs. Coal Co., 262 Pa., 1st Mackey 42. Mr. Justice Von Moschzisker, affirming the Luzerne Common Pleas, held, that an employe injured while acting in direct violation of the orders and repeated warnings of his employer may be convinced of negligence but will not be debarred of his claim or that of his dependents to compensation. Gurski had left some of his tools in a part of the mine that had to be abandoned, by reason of noxious gases; some two months later he started to recover his tools but was again warned not to enter this sector of the mine, which was placarded and fenced off, but with his helper he went into the abandoned working and was axphixiated. The Court saying: "We agree with the learned Court below that Gurski died from an accident which occured in the course of his employment within the meaning of the Act of 1915, he may have been negligent, but negligence is not a bar in a compensation case.

"In cases of this character the Referee should make his findings of fact so comprehensive and explicit as to disclose the whole story of the accident. Here the referee's findings are too meager and since no hearing *de novo* was held by the compensation board, that body, strictly speaking should not have found facts in addition to those stated by its subordinate officer, the referee. (McCanley vs. Imperial Woolen Co., not yet reported.) But this point was not urged in the court below and is not [illegible] here."

[illegible]me [illegible]

The Gurski case settled that negligence is not a defence in a compensation case. In line with this is Dainty vs. Jones & Langhlin 2nd Mackey, 17. Here a drunken engineer after being told to leave the premises, was later killed in trying to get on or off his engine, then in charge of a member of his crew. The award of compensation by the referee being sustained by the board, reversed by the Common Pleas, was reinstated by the Supreme Court. Also Blouse vs. R. R. Co., supra, where a boy, injured while riding on a mine car, in going for his dinner bucket, against the rules of the employer, was given compensation, reversing the board.

A bit out of place, but in line with our project, is the case of Lane vs. Horn & Hardt. Baking Co., 1st Mackey, 43, sustaining Commissioner Scott's contention that, "a heat stroke is an accidental injury within the meaning of the term used in the workmen's compensation act of 1915," Mr. Justice Von Moschzisker says: "On the governing rules of law the Commissioner correctly states, 'the term personal injury, in our act, is confined to injuries of accidental origin and such diseases as naturally result therefrom, and must be held to include any form of bodily harm or incapacity accidentally caused by either external violence or physical force" * * * a stroke of lightning a stroke from the direct days of the sun a heat stroke or heat prostration are untoward, unexpected mishaps and accidental injuries within the meaning of the act. It is immaterial whether the heat prostration is produced by natural or artificial heat, heat of the sun directly or through the heated atmosphere, if the exhaustion comes from heat in the course of employment.

Mr. Justice Von Moschzisker cites a number of cases to show the meaning of the word "accident," as the term is employed in modern compensation legislation, and as it is used in the law of insurance—a heat stroke is an unlooked for mishap in the course of employment in common language it is a case of accidental death, a heat stroke is held to be an "occurrence which was in its nature fortuitous," as was a stroke of lightning; and a death from sun stroke, also from frost, were held to be within the terms "bodily injuries effected thru external violent and accidental means." A case in 69 Pa., 43, where an assured strained himself while loading hay, defines "accident" as "event that takes place without one's foresight or expectation—an accident signifies happening by chance or unexpectedly—casual or fortuitous.

Perhaps, by reason of its greater importance, the case of Flucker vs. Carnegie Steel Co., 2nd Mackey, page 19, should be placed ahead of the last one. You are all familiar with the facts. Flucker, a man in good health, after entering upon his employment, went to his home, drank some, as he had been doing before he appeared for work and after being home a couple of hours started to return to the place of his employment, about 11:00 P. M. He was in charge of two pumps on opposite sides of a small ravine, over which the defendant had placed a foot bridge, guarded by rails about three feet in height.

Across this same ravine and near the foot bridge, was the trestle of a railroad, which, on the night of the accident, was covered with sleet. The following morning Flucker was found lying at the bottom of the ravine, between the foot bridge and the railroad trestle. This was the only evidence that he had returned or attempted to return to the place of his employment. It was his duty to make occasional visits to the smaller of the pumps perhaps once every two or three hours. The referee found that he met with an accident while in the course of his employment and made an award to his dependents, which was approved by the board. The Allegheny Common Pleas, Judge Shaffer, reversed, holding that the board and the referee were not warranted in drawing the inference that he had returned to the place of his employment.

The Supreme Court reversed the Common Pleas, reinstating the original award. The opinion was by Mr. Justice Von Moschzisker who said: "Where no facts ap-

pear indicating anything to the contrary it may be presumed logically that an employe at his regular place of service during his usual working hours, is there in discharge of some duty incident to his employment; and, when the dead body of an employe is found on the premises of his employer, at or near his regular place of service, under circumstances fairly indicating accidental death which probably occurred during the usual working hours of the deceased the inference may fairly be drawn in the absence of evidence to the contrary, that the employee was injured in the course of his employment.

Of course, the burden is always upon the claimant to prove his case; and the tribunal charged with the duty of finding the facts, must weigh and consider all attending circumstances, in order to determine how far they should prevail against presumption rising out of other facts favoring the claimant; but when this course has been pursued, a controlling finding that an employee was killed in a particular manner, reasonably indicated by the circumstances shown in the underlying findings, cannot properly be held to be without support upon the record."

"Where suicide is suggested, before the referee as a possible defense, the burden of proof is expressly upon the employer. Under the circumstances of this case as disclosed by the record before us, the conclusion of fact as to the manner of Flucker's death, was for the compensation authorities to draw, and when made by the referee and approved by the board, are final Poluskiewicz vs P. & R. C. & I. Co., supra.

The case at bar clearly establishes that an employee found dead upon the premises, at or about the place of his employment, the inference may be drawn that he was accidentally killed while in the course of his employment, if there is sufficient evidence that death was the result of an accident and not due to natural causes. But, as I take it, there cannot be an inference founded upon a supposition, i. e., where a man was found dead at the place of his employment, with no marks of violence upon his person, the inference cannot be drawn that his death was due to an accident which occurred in the course of his employment.

But the Flucker case is challenged in the recent case of Elizabeth Cranville vs. Scranton Coal Co., 6 D. R., page 426, by Judge Newcomb of the Lackawanna Common Pleas, who says: "The evidence utterly fails to show, either directly or indirectly, by implication, intendment or otherwise, howsoever, that decedent was piling the machinery, or doing anything whatsoever in line with his employment, or in furthering of the master's business. Yet, the referee says as a matter of law, that he came to 'his death' by accident while employed by and on the premises of the defendant company, within the meaning of the workmen's compensation act of 1915," and so defendant is cast in damages.

Such adjudication merely begs the critical question, out of the facts arise the law. The legal question is as to the existence of a compensable injury "within the meaning, etc.," and that is not satisfied by mere proof of accidental death on the master's business. If not, then there was no compensable injury within the meaning of the law and it cannot be made so by artifice of reasoning. Apparently the finding was felt to be intrically weak and so the award was sought to be sustained thru the aid of presumption. In that way it was held the case was ruled by Flucker vs. Steel Co., 26 Pa., 113. But in order to invoke what was conceived to be the doctrine of that case recourse was had to such circumstantial evidence as the proof afforded; and thus the occasion for resort to presumption vanished and its function was necessarily dispensed with. The Flucker case lays down a rule applicable to a situation where the evidence is silent touching the probabilities of accident to the servant in course of his employment; but such situation is not presented here. Quoting from the board, that: "It may fairly be presumed that the accident occurred while in the course of his employment there being no evidence to overcome such presumption." The court continues, "if the so-called presumption

is to be traced to the evidence recited, it would seem to lose its character of presumption and to assume that of an inference."

The court, of course, "distinguishes" the case at bar from the Flucker case, a Judge-like phrase in the nature of a Scotch verdict. "Guilty but not proven," and while the Supreme Court may have said so, I cannot agree. If it permitted to say it, our worthy Chairman takes very much the same attitude in the recent case of Hewitt vs. Ballard Knitting Co., wherein he mildly criticises the ruling in Rader vs. Stewart Silk Mill Co., D. R., 398, 2nd Mackey 105. And so our troubles begin all over again, unsettling our rather comforting belief that "any old case is compensable."

The case of March vs. Groner, supra, wherein the board was reversed, and Referee Houck sustained in an opinion by Mr. Justice Stewart, Mr. Justice Von Moschzisker dissenting, it is determined, that employment is casual if it be not in the regular course of the business of the defendant, as Justice Von Moschzisker puts it, "for the majority of the court, in the course of his regular business." "Business" being held to be that which a man follows for the purpose of gain or livelihood.

I have thus tried to present some leading cases from the decisions of our higher courts. As every trained lawyer knows, here and there are cases that stand head and shoulders above the ruck of the mass. By these exceptional ones he charts his course, and so we too should tie our decisions to the leading cases * * * those we find most frequently cited by the board and the courts. They are many other cases that might be briefly and profitably called to the mind, but time forbids.

Read your reports study your Mackeys, keep an open mind and remember that the great Commentator Blackstone defines "law as the perfection of reason." So use your good common sense. Holding quasi-judicial positions, we should and must be learned in the law that we administer, which has been given into our care under the guiding hand of the board and the liberal interpretation of the courts, and if we but do our part well, it will flower into a thing of beauty, a means of justice and equity for those who do the world's work, than which there can be no higher econium.

MR MACKEY: Before I forget it, the board issued reports, and we have now two volumes of compensation acts. If any of you gentlemen want these books you can obtain them from Mr. Solomon, or the bureau in the Keystone Building will forward them to you.

We will now hear from Mr. Bohlen in answer to the questions sent in by the referees and he will also be glad to hear from any of you gentlemen here tonight in case there are any questions you would like answered. Mr. Bohlen.

MR. BOHLEN: What is the compensation for a widow with one child in this country and one in a foreign country?

The widow in this country would take the same percentage as though a citizen of the United States, and so her percentage would be increased for the child in this country as though this child were a citizen, and as to the other child, under the decision of the board the child itself an alien, not a citizen of this country, would receive two-thirds of the percentage, otherwise 50 per cent, plus two-thirds and ten. That would apply from the very start if the child were non-resident from the very start; otherwise from the time the child became a non-resident, an alien child dependent as the first 300 weeks the award is to the widow and is increased in accordance with the number of children she has.

I can see why after the 300 weeks had expired, the question of the residence of one of the children would be material. During the 300 weeks I should think it would depend on the number of children no matter where they were. Under

the old act this might have been the case. The real purpose is to increase the amount to the widow because she is charged with the support of these children, and under the act the board is given the power to dissect the compensation paid to the widow for the sake of the child.

The amended act is to give that sum for the support of the children and as the child's support would be affected by the fact that he is a resident of a foreign country, the cost of maintenance is less, as 66 and 2-3 per cent in a foreign country is as good as a dollar here.

Referees can terminate and in all the decisions of any proofs to that effect, it is not in the provision of the act for such a course to be pursued. The decision in case of dependents shall begin is not altogether clear, I would say that that question is one which awaits the determination of the Supreme Court. For one case applies to instant death. It would seem that there being no reason of such a delay, but due only to the length where dependents come into right of compensation after the decedent had been drawing compensation. I can see no reason to discuss this further. I know the Supreme Court is looking for an opportunity to more definitely define the application of the employer. I have here the Law Journal which reviews the case of Marsh & Groane. The request came to me to read a general Roger case wherein he made that decision, and if he had written it, it would have been just the same and the Clerk case I want to discuss but the law journal which reviews these and leads to the conclusion that in all cases has been disregarded when a man dies on the employer's premises it is unlooked for.

What facts are necessary in claim will be justified, the conclusion of law upon which this law is based?

As long as the rights are received that this case can only be adjudged by the name of the custodian. It depends upon the type of the case. In case of the proper custodian waiving the right it is different.

Mr. Chairman, my idea in asking this question was this. There was returned to the referee that the Statute of Limitations was told that we were to pay for the postponement calendar on order from the Board. We have been ordered by Mr. Staples they were ready to proceed. Agreement in one case and awarded in the other two hearings, and we did not have sufficient evidence, and we thought it had better be settled; put on the postponement calendar.

It seems to the board as though it might be officially declared we are not at war and when that effect took place the alien custodian would abandon the case and let them go back to the original dependent and that seems very desirable, and I do not see why the alien custodian should collect this money under present circumstances, and we should let those cases rest a while.

Two claims at this time in our office and we have been notified by the representative of the custodian they had no other interest in the matter and we should take the matter up with the insurance company. Could we report back to the board? Yes.

What proofs are necessary to establish dependents by enemy alien widow, whose husband and father were killed in the course of his employment?

In all those cases the widow is living in the foreign country, and the law restricting all right of widows and children was to make the dependents on proof of official document. Depending exclusively on the legal right of the child in such a case and forms that question of decisions where the workman is living in America and the widow and children are living in foreign countries, and I am inclined to say that the official document would be sufficient proof.

Suppose he had married in this country and she never came over; her contention was that she got word from her brother that she was dead; they both filed claim petitions; no evidence whether she was dead or not.

If you have evidence that she does live you have to prove that the first wife is dead. I just had a case like that in Bethlehem, where the man had a wife in this country and one in a foreign country, and I decided the woman in this country was not his wife.

Well if you wait long enough, one of them will be dead. Let's have another question.

Give the case of a foreign-born child when the mother is born in America; are they to be regarded as citizens? How old are the children? They follow the nationality of the father and are non-resident children.

It should be brought on in the regular course of our business without any reference to any other case under our observation. We decided that he would know in our procedure his facts and we would not delay the hearing of the case, as it may come up in some other form.

Two other questions which concern the interpretation of the medical profession; contract for 30 days' medical attendance and professiou which gave only 100 dollars for the last sickness and burial; that has already been dealt with by Mr. Graham.

The B. & O. case; when the railroads were taken over by the Government; now the companies have taken them back. What is the situation?

We discussed that today, and did not find that is a question that ought to bother you for reason that if the claimant files a petition he is treated the same as any other claimant. Before the intervention of the United States Government, and that still prevails, it is up to us to decide whether that is so or not, but no advance notes or ruling is necessary. It is up to the B. & O. railroad in each particular case.

Now, gentlemen, I suppose that the big questiou that is left open before you is the amendment of 306 E. Dr. Blakeslee has a well-defined thought in that respect, and I do not think it is a matter that concerns the referees as much as the insurance carriers. Let us go back to the fundamentals. The act now provides that there shall be $100 provided for medical services and in addition thereto, 30 days in hospital. Go back to the fundamentals, and it is really a matter of contract in each particular case, and I do not believe you can lay down any rule to apply to any case.

In the first place, the duty was imposed upon the employer to provide reasonable, medical and hospital service. The right of selection was given the employee, which means a contract between the employer and employee. If he has been employing a physician and authorizes him to place him in a hospital, and if he places him in the hospital and the hospital renders the usual services the hospital does as in the case of the man hurt on the street and brought in the hospital. The question has been raised as to whether the hospital can divide up its services and so you must pay our staff physicians and make it possible to give more than the $100 and that will be settled when the time comes.

I want to thank you all for coming down here from all parts of the State and attending this meeting tonight, and as the hour is growing late, we will have to adjourn. Meeting adjourned.

Commonwealth of Pennsylvania

THE BULLETIN

OF THE

Department of Labor and Industry

CLIFFORD B. CONNELLEY
Commissioner

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LETTER OF TRANSMITTAL

Harrisburg, Pa., February 27, 1920.

Hon. Clifford B. Connelley,
Commissioner Department of Labor and Industry,
Harrisburg, Pa.

My dear Mr. Connelley:

I have the honor to transmit herewith the annual report of the Bureau of Employment for the year ending December 31, 1919.

Very truly yours,
(Signed) Jacob Lightner,
Director.

REPORT OF THE BUREAU OF EMPLOYMENT
DIVISION OF PRIVATE EMPLOYMENT AGENTS
October 1918 to October 1919

The Bureau of Employment of the State Department of Labor and Industry has just completed its fourth year. The two main divisions of its work have been the licensing of private employment agents and the conducting of free labor exchanges.

The licensing of private agents has become very well systematized. Agents who have been licensed by the Bureau for a year or more have become thoroughly familiar with its requirements and fewer and fewer violations of the employment act are occurring.

The greatest number of agents is located in Philadelphia, the next larger number in Pittsburgh, and only a few agents are scattered throughout the smaller cities.

During the past year the number of agents in the different cities was as follows:

Philadelphia,	184
Pittsburgh,	38
Ardmore,	3
Bryn Mawr,	1
Chester,	1
Darby,	1
Easton,	1
Erie,	1
Ridley Park,	1
Scranton,	1
Wayne,	2
Wilkes-Barre,	2
Wilkinsburg,	2
Total,	238

The number of licensed agents in the four years of the Bureau's existence was as follows:

1915-1916,	252
1916-1917,	291
1917-1918,	277
1918-1919,	238

Each agent pays $50 for his license and furnishes a thousand dollar bond.

In 1918-1919, $11,900 was collected in license fees; during the four years, this total was $52,900.

The following table shows the various groups and the number of agents representing each kind of employment work:

NUMBER OF PRIVATE EMPLOYMENT AGENTS IN PENNSYLVANIA

CLASSIFIED

October 1, 1918 to October 1, 1919.

Executive, Technical and Commercial.

Philadelphia,	6
Pittsburgh,	3
Ardmore,	1
Total,	9

Booking, (Vaudeville).

Philadelphia,	36
Pittsburgh,	3
Total,	39

Shipping, (Seamen).

Philadelphia,	22
Total,	22

Nurses.

Philadelphia,	5
Pittsburgh,	1
Easton,	2
Total,	8

General, (including Domestic).

Philadelphia,	93
Pittsburgh,	21
Ardmore,	3
Bryn Mawr,	1
Chester,	1
Darby,	1
Easton,	1
Erie,	1
Ridley Park,	1
Scranton,	1
Wayne,	2
Wilkes-Barre,	2
Wilkinsburg,	2
Total,	130

Detective.

Philadelphia,	4
Total,	4

Barbers.

Philadelphia,	2
Total,	2

Farmers.

Philadelphia,	3
Total,	3

Bakers.

Philadelphia,	2
Total,	2

Labor.

Philadelphia,	8
Pittsburgh,	10
Total,	18

Total of all classes, ... 238

PLACEMENT WORK OF PRIVATE EMPLOYMENT AGENTS FROM OCTOBER 1, 1918 TO OCTOBER 1, 1919

	Philadelphia.	Pittsburgh.	Other Places.	Total.
October,	2,651	531	225	3,407
November,	4,071	624	391	5,086
December,	3,305	630	242	4,177
January,	4,262	1,449	316	6,027
February,	4,007	1,540	360	5,907
March,	5,974	2,236	374	8,584
April,	5,438	2,279	312	8,029
May,	6,898	2,484	494	9,876
June,	5,912	2,903	390	9,205
July,	5,246	2,718	296	8,260
August,	6,529	3,762	364	10,655
September,	5,940	4,123	362	10,425
Total,	60,233	25,279	4,126	89,638
Grand total for all offices,				89,638

In Philadelphia there are three inspectors of private employment agencies, in Pittsburgh, one. Those men visit the agencies to see that they are being operated in accordance with the requirements of the law. The addresses of the inspectors are contained on the standard receipt form given by the agent to each applicant. Therefore, in case of unsatisfactory service by an agent, the applicant can call upon the inspector and make complaint. The inspector then takes up the matter with the agent. Sometimes it is necessary to hold a hearing in the inspector's office, at which time the agent and applicant appear and the matter is discussed. In the case of difficult decisions, the Director is supplied with all evidence and he renders a decision in writing.

During the year October 1918 to October 1919, there were 151 complaints against private agents. In 89 of these, the agent was found to be not at fault. In 62 the decision was made against the agent. Two hundred and forty-eight dollars and eighty-seven cents was refunded in small fees of one and two dollars.

The most common complaint and the one most easily settled is that applicants are not suited to the position for which they are sent to the employer to be interviewed. Agents are allowed to take a fee when they send applicants to openings, giving the name and address of the employer and all details. The fee is taken by the agent as a pledge of good faith on the part of the applicant; that he really will make an effort to see the employer and obtain the position. If he returns to the agent, saying that he did not suit the employer, his fee is returned at once.

If the applicant, however, promises the employer that he will come to work and then fails to do so, the agent need not return the fee to him. Also if he takes the position and works at it a few hours or a few days, and then quits of his own accord, the agent need not return the fee.

All the rules of the Bureau are based on justice and common sense, and neither the agent nor the applicant is shown any preference in its rules and decisions. Agents have, right along, expressed complete satisfaction with the way in which their work is supervised by their Director.

Towards the end of the year, a number of complaints came into the Bureau stating that various theatrical agents were breaking the law in allowing indecent acts to be booked. Their excuse was that the questionable acts were not booked by them, and that they were not responsible for the conduct of their performers after the conclusion of the show. They stated the questionable performances occurred after their agents had withdrawn from the place of entertainment. The actors were no longer under their supervision, they claimed.

At that time several of these same performers asked for licenses to conduct booking agencies and were refused on account of these complaints against them. The booking agents throughout the State were sent the following letter in consequence:

Harrisburg, Pa., November 1, 1919.

To all Booking Agents:

The attention of this Department has been called to the fact that certain persons have been booked by certain booking agents wherein the persons booked not only gave nude exhibitions in an immoral manner but arrests and raids have been made in some cases upon the entertainments. While the agents did not book a performance or performers for the purpose of giving nude or nearly nude exhibitions or performances, at the same time the persons did give such performances.

Therefore this letter to inform you that if in any of your bookings, a performance of this kind is given in addition to the regular acts you booked them for, the Department will hold you responsible and you license will be revoked.

We would respectfully call your attention to Section 16 of Act 397, herewith enclosed, which explains itself, and you should be in position to know when a person comes under that section.

In our investigations of these matters the agent will say that he did not book the performers to give a nude exhibition or performance, but their regular act which is clean and that he does not feel he should be held responsible for a performance that is given other than that for which he booked them. Another agent will say he did not book this act but gave information to the parties giving the entertainment or supper as to where they could secure such performers. Both of the above excuses are to our mind guilty acts on the part of the agent as they make the agent a partner to such transactions and will not be sufficient excuses in the future. Therefore we would ask you to co-operate, if not for your own benefit, for the benefit of those who are trying to run a clean business.

This Department does not feel that it is a fair deal when the innocent must be held under suspicion of wrong doing for the actions of the guilty, and we hope that this letter which is being sent to all booking agents will be sufficient warning, and also be received by you in the spirit in which it is written.

Yours very truly,
JACOB LIGHTNER,
Director.

Several agents whose reputation is unquestionable replied to this letter that they would do all in their power to help the Director correct those abuses by certain other agents. The following letter was received from the ——————Entertainment Bureau Managers Association:

——————— Pa.

"Jacob Lightner, Esq.,
Director, Department of Labor and Industry,
Harrisburg, Pa.

Dear Sir:

"We are glad to acknowledge receipt of your Bulletin to Booking Agents, dated ———————, paragraphs of which read as follows:

" 'The attention of this Department has been called to the fact that certain persons have been booked by certain booking agents wherein the persons booked not only gave nude exhibitions in an immoral manner but arrests and raids have been made in some cases at these entertainments. While the agents did not book a performance or performers for the purpose of giving nude or nearly nude exhibitions or performances, at the same time the persons did give such performances.

" 'Therefore this letter to inform you that if in any of your bookings a performance of this kind is given in addition to the regular acts you booked them for, the Department will hold you responsible and your license will be revoked.

" 'We would respectfully call to your attention Section 16 of Act 397 herewith enclosed, which explains itself, and you should be in a position to know when a person comes under that section.'*

"This is to advise you that the undersigned booking agents are with you to a man and condemn the booking of indecent and vulgar acts in any form and we look upon the booking of nude and semi-nude acts as criminal. We desire to commend you or your determination to enforce the law as quoted by you and in so doing to force these dirty and disgraceful vipers from the platform. Be assured, therefore, that we shall be more than glad to co-operate with you in ridding the platform of this good-for-nothing material and we are glad to have you say that you will cancel the license of any man in the booking business that engages in the sort of dirty work that you speak of in your letter. We further pledge ourselves to report to you any such cases that shall come to our attention."

(The above signed by 15 members of this association).

*Section 16 of Act 397 states as follows:

EMPLOYMENT FOR IMMORAL PURPOSES PROHIBITED.

"Section 16. No employment agent shall furnish any female for immoral purposes; or send, or cause to be sent, any female employe to enter as servant, inmate, or for any purpose whatsoever, any place of bad repute, house of ill-fame, or assignation house, or any house or place of amusement kept for immoral purposes, the character of which such employment agent could have ascertained upon reasonable inquiry.

"No employment agent shall knowingly admit or allow to remain in such agency any person of bad character, prostitute, gambler, or intoxicated person."

Also, in consequence of these violations, a new weekly report sheet was printed to be used by these agents during the new fiscal year which contains a more complete statement of each booking than the sheet now in use. The effort is being made in every direction to clean up all such evil practices.

The following is a list of all the important rules formulated during the past four years of the Bureau's existence:

All licensed agents are restricted from doing business as such agents to the place for which they are licensed.

No agent shall have sub-agents.

No agent shall use runners or scouts.

No agent shall personally solicit on the streets.

No agent shall solicit or influence in any way the employees of one establishment to leave it for another.

All agents advertising must have a bonafide order from an employer covering the number and kind of men advertised for. (The above as per Attorney General's decision of May 23, 1918).

Licenses expire September 30th of each year, no matter what the date during the fiscal year license was granted.

No refund of any part of license fee is made for license issued for a shorter period than the full fiscal year. (October 1 to October 1).

If licensee dies during the term of a license, his heirs may carry on the business until the end of the fiscal year.

The refusal of a license is within the power of the Commissioner when investigation proves applicant an unsuitable person, when location is unsuitable or for any other good reason.

Aliens cannot be licensed unless they have first papers and state that they intend to take out their second papers.

Associations are exempt where the members provide employees for themselves as per the act.

Agents must use standard receipt forms.

All contract and agreement forms must be approved, also schedules of fees.

Agents must not take fees until applicant is referred to a bonafide opening.

If the applicant is entitled to any of the money, he is entitled to all of it, and if the agent is entitled to any of the money, he is entitled to all of it.

An applicant must receive a position or he must receive his money in full.

Receiving a position means that the applicant is referred to the employer and after talking the matter over with the employer, accepts the position.

Accepting a position means that he goes to work at the position or promises the employer that he will go to work. Either of these is ruled as an acceptance of the position.

In a case where applicant is referred to a position by an agent, and the applicant begins work, but on the day he receives his pay, it is not the amount the agent represented he was to receive, and he quits, demanding his money from the agent, it is the duty of this department to get the version of the agent preferably a copy of the order received from the employer.

A perusal of the same may show that the agent misrepresented the position, or the terms and the conditions thereof. If so, he must refund the fee in full. If it shows that the employer misrepresented the position, terms or conditions to the agent, the agent should refund the money to the applicant and hold the employer responsible for same by law.

In all cases where money must be refunded, it must be refunded in full, plus any traveling expense the applicant has been put to by the agent for which he paid agent in advance.

That the applicant shall not be considered at fault if he has not first been notified by the agent, in cases where a strike or lockout is in progress, or if he refuses any position otherwise incorrectly described to him by the agent.

No agent is permitted to charge employers a monthly or yearly amount for his services, as this is contrary to the intent of the law.

In addition to the supervising of private employment agents, the Bureau has investigated all complaints of aliens brought to its attention. Seventy-five complaints of the non-payment of wages were investigated. Through the efforts of the Bureau, the payments were made, a sum amounting to $2,637.07 for the 75 complainants.

During the year there were six prosecutions for violation of Act 397, which act controls the employment business for profit. In each case, the employment work was being done without a license.

Section 2 of Act 397 provides that bureaus run by employers to obtain help for themselves are exempt. Therefore, when persons are found in a certain locality recruiting labor for a firm, the question is: "Are you a bonafide employee of that company?" If there are no credentials to show that he is, then he is ordered to stop work at once. There are more violations of that kind by employees of firms than by persons opening up agencies for themselves without a license. This latter is a much bolder move and more rarely taken, but many employees of firms needing labor, will take a chance on recruiting a few men for their companies at one to five dollars each.

Two such persons were arrested through the efforts of the Philadelphia investigator and were taken before a magistrate and on being proved guilty were fined, each $50 and costs. Each of those men pre-

tended to be a bonafide employee of a well-know New York firm. They carried fake letters of authorization, on the stationery of that company. They later confessed that they were agents of a New York strike-breaking detective bureau and were getting $5 per man for strike-breakers.

Two prosecutions were against a man and woman who were running a so-called "charity" bureau with "donations" from those who registered. Just before their arrest, they began to charge regular fees in addition to contributions.

Another person with a criminal record was found violating the Act. He had had nine arrests to his record for the two years previous to the offense for violating the employment agency act. He was tried, found guilty and sentenced to imprisonment in the county jail for six months. He had been sending persons out to fake addresses and had charged a fee in one case as high as $25.00.

Another person was found in Philadelphia, sending moulders to New York as strike-breakers. He was getting $5.00 per man. He was not an employee of any company but was forwarding the men to an agent in that city.

In addition to the six prosecutions for violation of the Employment Act, two of the regular licensed agents had their licenses revoked. In both cases these agents had not been giving the standard receipts to applicants from whom they took fees and they otherwise violated the law. The inspector who discovered these violations warned the agents that if they did not obey the law, their licenses would be revoked. In spite of this, they continued as before and were finally notified by the Director that they must close their office. Their licenses were returned to Harrisburg.

It is expected during the next year to systematize the licensing of private agents still further. A standard schedule of fees for the main classes of agencies is to be considered. At the present time, the only fixed rates are for general agents, that is, those handling all kinds of labor. Their schedule will be readjusted by the Industrial Board.

It is hoped that the New Year will bring about still greater cooperation between the Bureau and its agents, and that a clearer understanding will eliminate even such few violations as have occurred during the past year.

DIVISION OF FREE LABOR EXCHANGES

The opening of the year 1919 found the Pennsylvania State Employment Bureau maintaining the cooperation into which it had entered with the U. S. Employment Service in August, 1918. A little more than a month prior to the beginning of the year an armistice between the Allied and Associated governments and the Central European Powers became effective. The signing of this preliminary peace pact presaged the ending of the most gigantic conflict in human history, one in which the United States had played a conspicuous part, and the closing of which would inevitably affect its economic and industrial condition.

Up to the time of the signing of the Armistice our government had sent millions of men across the seas, and to properly arm, equip and clothe them, our manufacturing establishments were running at full capacity, the men and women were employed in them to an extent never known before. The outlook for actual peace being bright, the government, naturally curtailed orders for material, except such as was absolutely necessary. This meant so great a slow-up in the matter of production that many of the plants were working on half time and others were wholly shut down, with a consequent releasing from employment of many thousand of people.

Under instructions from the U. S. Employment Service, the chief collateral work with which the State Bureau was concerned at the beginning of the year was ascertaining the number of workers who could be thrown out of employment by reason of the cancellation of government contracts, and whether there was a possibility of finding employment for these men in other plants whose business would not be adversely affected by government action. As most plants turned out products which were used directly or indirectly by the government it will readily be seen that it was quite a task to make speedy adjustment in placement of workers thus temporarily or permanetly relieved.

The Employment Service is always quick to feel the effects of any fluctuation in the industrial world, hence with an unsteady market for products which had lately been made for war purposes, that part of the State Bureau of Employment which is devoted to the operation of free employment agencies showed a decrease in the matter of placements. The records of our office show that many manufacturers engaged on government contracts had nearly completed the fullfillment of their orders. They were anxious that the government rescind the cancellation order, and were hopeful that they would be allowed to

run to completion the orders they had on hand. For this reason many had a hesitancy in discharging their men, but replied to a questionnaire we sent them in a manner that indicated they would be forced to discharge their men unless the government withdrew its order cancelling their contracts.

The extent to which these cancellations were made throughout the United States was undoubtedly large, and, of course Pennsylvania, which has had the largest portion of government contracts, felt the order more greatly than any other state. The manufacturers of steel and steel products, of cotton, woolen and knit goods, of rifles and cannon, or leather, rubber and in fact all lines of merchandise, alike felt the result of this cancellation. This meant, too, that coal production, the products of mines and quarries were slowed-up pending the decision of the government. As most of the contracts were cancelled, notwithstanding the endeavors of manufacturers to keep them alive, the result was that thousands of men and women were released, and a large part of the burden of finding employment for these men was thrown upon the State Employment Bureau acting with the Employment Service of the U. S. Government.

The National Government evidently felt that there was no doubt about Germany's signing the peace terms which the Allies would dictate, and consequently immediately after the armistice they began demobilizing the army. This demobilization meant that thousands of men would be seeking civilian employment and to the number of people thrown out of work by cancellation of government orders, were added the soldiers who were rapidly being discharged. The first care of the Employment Service was the placement of discharged service men and to this task we bent our best energies.

FOLLOWING UP THE DISCHARGED SOLDIER, SAILOR AND MARINE

It may be of interest to note how the Pennsylvania State employment service, so far as its facilities allowed, followed up the men who were discharged from the service of the country in order to procure employment for them. The methods varied according to the manner in which we received these applications. In one case the U. S. Government had representatives in the various camps at which men were being discharged. The soldier was advised that these representatives would take card applications from them for the purpose of securing employment after their discharge. These cards were filled out, giving the name of the soldier, his home address, the character of the work which he had hitherto performed, and the work he was

desirous of obtaining. They were then forwarded to the Pennsylvania State employment service office nearest to the home of the applicant. It then became our duty to follow this applicant up, find out whether he had secured employment and if he had not, to make immediate efforts to secure him a job. This we did with a letter in which we placed a return addressed envelope. The following is the form of letter we sent to these applicants:

"Dear Sir:

"We have received at this office an application card for employment which you filled out at the camp from which you were recently discharged. This card was mailed to us by the U. S. Employment Service.

"In order that we may clear our records please fill in the following blank spaces and mail this form back to us immediately.

Yours very truly,

Superintendent."

1. Did you receive the job you had before entering the Service?
2. Are you employed elsewhere?
3. Do you wish us to endeavor to find employment for you?
4. If so, will you kindly call at this office?

(AS THIS IS IMPORTANT, PLEASE ANSWER.)"

Upon receipt of the information filled in at the bottom of the letter we took such steps as were necessary in accordance therewith.

The second method used was in cases where men made application either in person or by letter after they had been discharged. In these cases an intensive effort was made to secure employment as near to the home of the men as possible. It must be remembered that at this time there was a depression in the industrial world that caused curtailment of production and a consequent diminution of the working forces employed in all the industries. Notwithstanding this many employers strained a point to take on one or more discharged men, and thus assisted in keeping the promises made to them before entering the service. To procure this cooperation we sent out a number of letters to employers, the character of which will be hereafter noted.

Upon receiving written application from soldiers we wrote them asking them to call at the nearest office, if convenient, in order that we might obtain a more detailed and comprehensive idea of their qualifications. If we did not have an order for the particular work which the applicant wanted, we offered him such work as was available at that time. If the applicant for any reason refused to accept such work as we had on hand, we kept his application alive with a view of referring him to the work for which he was qualified as soon as we received an order of this character. In this manner we were successful in placing large numbers of men as will be shown on the table of placements hereto attached.

THE CAMPAIGN TO PROCURE JOBS FROM EMPLOYERS

The employment service has always been under the necessity of using such tools as it had at hand, and as a consequence there was never a constant method of procuring jobs for these men. We always had to meet an issue as the circumstances demanded. At one time, we made an appeal to the employers of the State, urging them to hold open positions for men both from the standpoint of keeping their promises to the men and from the standpoint of purely patriotic reasons. It is worthy of note that the great majority of the employers, in response to our inquiries, expressed a willingness to take back the men who had left their service to enter the army and navy. Some reported that they had already taken back their men; some that they were holding places open for those of their employees in the service; others that while they had no openings at all, they would take back their men at a sacrifice. There were some few, however, who seemed not to see the importance of the matter.

The following is a copy of a circular letter which was sent out by this Bureau to employers:

THE DUTY OF EMPLOYERS TO MEN OF THE 28TH DIVISION

Having performed their several duties with a fidelity that has won the commendation of the whole world, and the valor that has caused all of us to feel prouder for being Pennsylvanians, the 28th Division has now returned from the bloody fields of France. Largely made of men who formerly constituted the National Guards of Pennsylvania, they are being welcomed in the various towns of the State with enthusiastic receptions, parades and speeches. No words of praise are too great to bestow upon these men who stood for so long in the front line trenches to repel the invader of our freedom and our liberties. We are proud of everyone of them; we are proud of the men whose foresight and vision made it possible that such a body of trained men could be placed at the disposal of the Government at a time when their services were so sorely needed. The various officials of the Commonwealth in former years, the members of both branches of the Legislature, the officials of the National Guard are all to be commended for having kept these men up to such a standard of efficiency that they were so readily adaptable to the requirements of the National Government for service in France.

That this training was of so great a benefit is shown by the manner in which these men carried themselves throughout the war. Enduring hardships, suffering from cold, hunger and thirst, they deported themselves like veterans. Pitched against the flower of the German Army along the Marne, they carried our banner high amid the shock

of battle and looked death in the face a thousand times, that the ideals of freedom might be saved to the world. Always proud of her history in military affairs, Pennsylvania is prouder today because of the acts and deeds in the late war of her own sons living and dead. This division stands fourth in the list of the American Divisions as regards the number of casualties, and second to none in steadfastness, bravery, hardy endurance and brilliant achievement.

It is highly probable that in order to tell future generations of the worth and deeds of these men, tablets will be erected, memorial bridges and buildings placed here and there, and statutes cast, but we as citizens of the Commonwealth owe more to them than erecting edifices to perpetuate their fame. To be practical, we owe the survivors of the Division a job. Employers everywhere, made elaborate promises to these men that when they came back from service abroad their old positions would be awaiting them. The exceptional circumstances surrounding these promises made them are as sacred and inviolable as if they had been sworn to before duly constituted officials. For one reason or another, in certain cases, these promises have not been fulfilled. We shall not attempt here to place the blame, but the conditions whereby many soldiers are out of employment shows that they have not been kept. This creates a serious situation, because they have every right to demand that we keep our part of the contract as faithfully as they have kept theirs. It seems to us that the most important question confronting us at this period of re-construction is the proper placement of every discharged soldier, sailor and marine. Our part in Pennsylvania is the placement of the surviving members of the National Army known as the 28th Division. We therefore appeal to the employers of the Commonwealth to make an extra effort to place as many of these men as possible. Undoubtedly you will be able to squeeze in a few more men, or at least one. Even though the payroll will be increased just a little more than your Board of Directors has ordered, you can justify your action by referring to the promises, explicit and implied, of the manufacturers of Pennsylvania. Nothing will so help us to turn back the rising tide of foreign ideas as permanent, well paid employment of our citizens, and especially of our returned soldiers. No money at the present time is so well invested as that which brings this condition about, for it is an insurance against the spread of ideas in this country, which are utterly at variance with our ideals.

When you take these men into your shop, factory, mill, office or laboratory, you will employ men who are accustomed to discipline, to co-operation and to initiative. Their army life has made of them "MEN OF IRON" so far as brawn, muscle, and spirit are concerned; and as the standards of intelligence and physical health were never so high as in this war, you will be getting the pick of the country for

your plant. Moreover and beyond all, men who have offered their lives that the country might live are not at all likely to confuse slight differences of opinion between employer and employee, with governmental deficiencies for the righting of which violent measures are required. Eyes which watched through early dawn or pale moonlight the fiendish preparation of the Hun to assault the trenches of the allies, will readily detect the insidious methods by which self-seeking agitators are laying the foundations for the overthrow of law and order.

Employers, consider this proposition.

The time for discussion has passed, the time for action is here. The success of the efforts to place these men depends upon your co-operation.

However small in number the men you may take on, it will be of some assistance in making up the aggregate.

As the boys responded to placards and posters on the walls of your plant which asked them to "ENLIST NOW," so we call upon you to respond to the slogan in behalf of these boys "EMPLOY THEM NOW."

In addition, the following form letter was sent out to employers from each of our offices:

PENNSYLVANIA STATE EMPLOYMENT SERVICE.

May 1919.

Gentlemen:

We are receiving at this office, applications for employment from many discharged soldiers, sailors and marines, for some of whom we have not as yet found places.

If you have in your establishment position of any kind, labor, mechanical or technical, into which you can fit one or more of these men, please advise us.

Remember, every dollar spent at this time for wages, is an insurance against the spread of foreign propaganda; every job given strengthens the arms of the defenders of law and order; every well paid, permanently employed man is an asset upon which the State and Country can rely at critical times.

If you can assist us, please answer the following questions and return this letter to us at once:

Yours very truly,

Superintendent.

1. How many ex-service men can you use?
2. At what kind of work?
3. Wages ———— Hours————.

Employers responded to our appeal with enthusiasm and we received at our various offices many orders for service men. Upon receipt of such orders we referred to the employers such service men as we had not as yet been able to place. At no time was it impossible

to offer soldiers, sailors or marine work of some nature. It may not have been the kind for which they applied, but believing that they would accept another kind of work in order to tide them over the transition period, we offered such as we had on hand and were successful in many cases in persuading them to take available employment.

The following table shows the registration, the orders and the placement of the offices of this Bureau while operating wholly under the auspices of the State, that is for the period beginning April 1919 and ending December 1919:

SOLDIERS.

	Persons applying for positions.	Persons asked for by employers.	Persons sent to positions.	Persons receiving positions.
April,	3,629	3,038	2,935	2,740
May,	5,924	6,844	5,048	4,865
June,	9,028	14,321	7,693	6,890
July,	8,855	8,543	7,322	6,760
August,	9,715	15,004	8,300	7,408
September,	5,409	17,065	4,790	4,214
October,	5,324	6,654	4,661	4,212
November,	2,927	1,524	2,474	2,339
December,	2,250	991	1,820	1,776
Total,	53,061	73,984	45,043	41,204

CIVILIANS.

	Persons applying for positions.	Persons asked for by employers.	Persons sent to positions.	Persons receiving positions.
April,	13,739	14,489	5,464	5,164
May,	21,293	23,301	9,192	8,848
June,	19,416	26,893	14,769	14,091
July,	18,729	27,020	15,800	15,159
August,	22,687	46,190	21,284	18,575
September,	16,995	41,418	14,810	13,633
October,	23,624	47,775	19,559	18,518
November,	15,949	32,171	13,568	12,057
December,	14,776	27,758	12,512	11,624
Total,	167,208	287,015	126,958	117,669

WOMEN.

	Persons applying for positions.	Persons asked for by employers.	Persons sent to positions.	Persons receiving positions.
April,	4,137	3,075	2,167	2,
May,	1,664	1,943	1,526	1,
June,	1,244	1,763	1,088	1,
July,	2,238	2,966	2,061	1.
August,	2,844	3,438	2,522	2,
September,	1,842	2,323	1,590	1,
October,	2,111	2,490	1,829	1,
November,	1,650	1,835	1,364	1,
December,	1,049	1,012	776	
Total,	18,779	20,845	14,923	14,

SUMMARY.

	Persons applying for positions.	Persons asked for by employers.	Persons sent to positions.	Persons receiving positions
Soldiers,	53,061	73,984	45,043	41
Civilians,	167,208	287,015	126,958	117
Women,	18,779	20,845	14,923	14
Total,	239,048	381,844	186,924	173

ANALYSIS OF EFFORTS IN BEHALF OF APPLICANT AND EMPLOYERS

72.4% of the persons applying for positions received work.
42.7% of the persons asked for by employers was furnished.
7.3% of the persons sent to positions failed to receive work.
18.1% of the applicants were holding positions when they as for work.
8.3% were not capable of filling position for which they applie
1.2% were applicants for executive or technical positions whom openings could not be found.

CLASSIFICATION OF WORK OBTAINED FOR APPLICANTS

Agriculture,	1
Building and construction,	10
Clerical, professional and technical,	4
Clothing and textiles,	2
Domestic and personal service,	2
Food and tobacco,	1
Lumber,	1
Metals and machinery,	40
Mine and quarry,	8
Paper and printing,	1
Transportation and public utilities,	10
Common labor,	20

Average per capita cost of placement for the year 1919 was $.35.

By referring to the table showing the placements made by the offices of the employment service, it will be seen that during the last nine months of the year 1919 we were instrumental in securing positions for 173,159 persons. Assuming that the average daily wage during that period was $5, which is certainly not a high estimate considering the wage scale of the period, we will have a total of $865,795 per day earned by people placed in positions through our instrumentality.

Another view of the same matter is presented thus: Suppose that on the average each person received work a day earlier than he would have received it had he not been able to draw on the facilities presented by the employment service. It will readily be seen that wages aggregating the amount above stated was saved workers largely by reason of the existence of this service.

Our calculations are based on one day's loss or gain in wages. This is a conservative estimate as our experience has shown that by reason of giving out information concerning employment we are frequently able to save many days of delay and many miles of travel as well as expense.

During January, February and March 1919, while this Bureou was in co-operation with the U. S. Employment Service, there were placed in the various industries of the Commonwealth 46,450 persons. Reports from all of our offices were at that time filed in the office of the Federal Director at Philadelphia. Tabulation was made in that office and summaries of placement only sent back to the branch offices. For this reason we have no record of the number of applicants, number of orders or the number of people referred. By adding this placement to 173,159 which is the full placement for the nine months which the State had full control it will be seen that our full twelve-month's placement amounted to 219,609.

AS TO OFFICES

At the beginning of the year 1919, the State in co-operation with the National Government maintained the greatest number of offices devoted to the matter of employment that it had ever reached. The problem of securing the maximum number of employees for plants and establishments during war had shown the necessity for these offices and as a consequence when the United States Government began its active co-operation with us it had made possible the organization of these additional offices.

The following is a list of the offices maintained at this time:

Altoona.
Allentown.
Chester.
Easton.
Erie.
Harrisburg.
Johnstown.
Lancaster.
McKeesport.
New Castle.
New Kensington.
Pittsburgh.
Pottsville.
Philadelphia (1519 Arch St.).
Philadelphia (City Hall Booth).
Philadelphia (Front & York Sts.).
Reading.
Scranton.
Wilkes-Barre.
Williamsport.
York.
Philadelphia (135 S. 16th St.).

Some of these offices were devoted to the purpose of securing employment and filling orders for soldiers, civilians, and women; the one at City Hall Booth, Philadelphia for soldiers only, and the office at 135 S. 16th Street, Philadelphia for women exclusively.

The number of offices above listed was maintained under Federal and State control until the latter part of March 1919 at which time the co-operation of the United States Government was withdrawn by reason of lack of appropriation for the U. S. Employment Service. This necessitated a reduction in the number of offices operating in the State so that beginning with April the offices maintained were as follows:

Altoona.
Allentown.
Chester.
Easton.
Erie.
Harrisburg.
Johnstown.
Lancaster.
McKeesport.
New Castle.
New Kensington.
Oil City.
Pittsburgh.
Pottsville.
Philadelphia (1519 Arch St.).
Philadelphia (City Hall Booth).
Philadelphia (Front & York Sts.).
Reading.
Scranton.
Williamsport.
York.

It will be observed that there were several additional offices opened up after the co-operation of the United States Government was withdrawn. This was made possible by reason of the fact that the Public Safety Committee of the Commonwealth took the place which had

rmerly been held by the United States Government as co-operative ctor.

Until August 1, the offices of the service remained as above with ie exception of New Castle, York & Front Streets, Philadelphia; nd York.

The Public Safety Committee of the Commonwealth was superded by the act of Legislature creating the Welfare Commission of ie State and the co-operation which had begun with the ending of ie National Government's partnership in our work was withdrawn uring the fall so that the following offices were discontinued:

Altoona.	Oil City.
Allentown.	Pottsville.
Chester.	Philadelphia (City Hall Booth).
Easton.	Reading.
Lancaster.	Wilkes-Barre.
New Kensington.	Williamsport.

The offices now maintained by the State for matters of free employ-ient are:

Erie.	Philadelphia.
Harrisburg.	Pittsburgh.
Johnstown.	Scranton.
McKeesport.	

The reorganization of several of the offices is now held in contemlation.

THE IMMEDIATE FUTURE

Unless certain pending questions of National and International haracter shall have been settled there will be, unless all signs fails, resumption of unparalled magnitude in our industrial activities. Iany building and construction projects have been held back because f uncertainty as to markets, wages and proposed legislation.

The manufacturing and industrial interests have been similarly ffected. Removal of this uncertainty will undoubtedly give such a reedom to trade, industry and commerce as to make a huge demand pon the ranks of labor for additional employes.

It is doubtful whether we can look for any considerable immigraion from European countries, but there is strong evidence that sufcient inducement will be offered to those who are thinking of leaving heir European homes to cause them to stay at home. Then, too, here are indications that many foreigners now in our midst will eturn to the countries they formerly inhabited.

It would appear then that since we shall lack any considerable ugmentation to our labor forces the most important study will be to lispose most skillfully and efficiently of the available supply of abor. Given the proper authority and a full co-operation of emloyers this Bureau feels that it can be of maximum benefit to emloyer, employee and the State.

Commonwealth of Pennsylvania

THE BULLETIN

OF THE

Department of Labor and Industry

CLIFFORD B. CONNELLEY
Commissioner

VOLUME VII

SERIES OF 1920

No. 6.

HARRISBURG, PENNA.
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1920.

DEPARTMENT OF LABOR AND INDUSTRY

CLIFFORD B. CONNELLEY, Commissioner

W. A. Riddle, Chief Clerk.
A. O. Vorse, Editor.

INDUSTRIAL BOARD

Commissioner, Clifford B. Connelley, Chairman.
Members: Otto T. Mallery, Philadelphia.
Mrs. Samuel Semple, Titusville.
James C. Cronin, Philadelphia.
Dr. A. L. Garver, Roaring Spring (Deceased).
Secretary, Fred J. Hartman, Harrisburg.

WORKMEN'S COMPENSATION BOARD

Harry A. Mackey, Chairman, Philadelphia.
Paul W. Houck, Shenandoah.
Benjamin Jarrett, Farrell.
Clifford B. Connelley, Commissioner.
Attorney-General, William I. Schaffer, Counsel Ex-Officio.
Lee Solomon, Secretary.
Counsel, Francis H. Bohlen, Philadelphia.

BUREAU OF INSPECTION

John H. Walker, Chief.

Supervising Inspectors

Francis Feehan, Pittsburgh.
J. J. Coffey, Philadelphia.
A. S. Keller, Lancaster.
George M. Dunlap, Williamsport.
A. W. McCoy, Meadville.
S. G. Fitch, Scranton.

Division of Hygiene and Engineering

Francis D. Patterson, M. D., Chief.
John S. Spicer, Chemical Engineer.
Elizabeth B. Bricker, M. D.

BUREAU OF MEDIATION AND ARBITRATION

William J. Tracy, Chief.

BUREAU OF EMPLOYMENT

Robert J. Peters, Director.
Jacob Lightner, Chief of Division of Licensed Agents.

BUREAU OF WORKMEN'S COMPENSATION

W. H. Horner, Director.

BUREAU OF REHABILITATION

S. S. Riddle, Chief.

LETTER OF TRANSMITTAL

October 11, 1920.

The Honorable Clifford B. Connelley.

Commissioner, Department of Labor and Industry.

My dear Dr. Connelley: I am submitting herewith a brief historical sketch of the activities of the Industrial Board to December 31, 1919. This is intended to take the place of the Annual Report for 1919. Trusting this meets with your approval, I am

Yours very truly,

FRED J. HARTMAN,
Secretary, Industrial Board.

OUTLINE OF TOPICS.

ACTIVITIES OF THE INDUSTRIAL BOARD TO DECEMBER 31, 1919.

PART I

PART II

PART I.

ACTIVITIES OF THE INDUSTRIAL BOARD TO DECEMBER 31, 1919.

The Industrial Board since its creation in 1913 as a part of the Department of Labor and Industry has gone through three legislative periods. During this time it has been a prominent factor in the development of the department. It has served as a pathfinder and as a helpmate in the important work of protecting the life, health, safety and morals of workers and advancing the prosperity and welfare of the industries of the Commonwealth.

I. A TRANSITION YEAR.

Up until 1919 there was comparatively little change in the personnel of the Board and in its policies, if it can be said to have had any. It was working for the most part along new and untried lines. Its functions were not understood very clearly, except as they were stated in the broad and indefinite language of the law. The duties, however, took on meaning as activities multiplied and as results began to show. The year 1919, with the entrance of a new personality to direct its efforts, a checking up of its multiplied activities and the consequent announcement of a definite program of work, marks a transition period in its history. To fully understand this transition, and its bearing upon the future, it is necessary to trace its activities through its personnel, the evolution of its functions and the program of work as outlined for the first time in 1919.

II. PERSONNEL OF THE BOARD.

(a) *A Representative Body.*

In accordance with the law the Industrial Board consists of the Commissioner of Labor and Industry as chairman and four additional members, approved by the Governor, by and with the consent of the Senate,—one of whom is an employer of labor, one a wage-earner and one a woman. No provision is made setting forth the requirements of the fourth "additional" member, but custom and common agreement have designated him as a citizen-at-large or a representative of the public. The organization as thus effected meets the modern demand of a representative industrial commission consisting of the government, the employer, the employe, the public and the woman in industry.

Under the present conditions having to do with the manner of appointment, the monthly meetings and the nominal compensation of the associate members, there need be no fear of the Board losing its representativeness. It might be well, however, to sacrifice something of this, providing it were possible to correlate more closely the personnel of the Board with that of the other divisions of the department and consequently to the work in general.

(b) *A Slowly Changing Body.*

It was evidently the intention of the law that the personnel of the Board should never undergo a radical change. In the past six years ten people have served as members of the Board showing that the change has not been considerable.

There have been two Commissioners of Labor and Industry who acted as chairman,—Dr. John Price Jackson, from February 1914, when the Board was first organized, to November 1917 when he was called into active military service, and Dr. Clifford B. Connelley, who was appointed in 1919. During the interim between 1917 to 1919 Mr. L. R. Palmer, from December 1917 to November 1918, and Mr. Walter McNichols, from November 1918 to April 1919 who served as Acting Commissioners, took Dr. Jackson's place as chairman of the Board. Mrs. Samuel Semple, the woman member of the Board, is the only person who has served continuously from the beginning. One member, Mr. Geo. S. Comstock, representing the public, died June 12, 1915 and was succeeded by Mr. Otto T. Mallery, who is still a member. Mr. James C. Cronin, representing the employes, has the distinction of being one of the original appointees who was re-appointed in 1919 after two others, Mr. William Young and Rr. Richard V. Farley had each served a short period. Since 1916 the Board has appointed two secretaries. The following is the complete list of the organization of the Board from the beginning:—

(c) *Members of the Board.*

1. *Chairman.*

   Dr. John Price Jackson, Commissioner of Labor and Industry. 1913 to 1917.*

   Dr. Clifford B. Connelley, Commissioner of Labor and Industry. 1919.

   (a) *Acting Chairman.*

   Mr. L. R. Palmer, December 1917 to Nov. 1918.

   Mr. Walter McNichols, Nov. 1918 to April 1919.

2. *Representing Employers.*

Col. John P. Wood.	1914 to 1916.
Dr. A. L. Garver.	1916 to ——.**

3. *Representing Wage-earners.*

Mr. James C. Cronin.	1914 to 1916.
Mr. William Young.	1916 to 1918.
Mr. Richard V. Farley.	1918 to 1919.
Mr. James C. Cronin.	1919 to ——.

4. *Representing Women.*

Mrs. Samuel Semple.	1914 to ——.

5. *Representing the Public.*

Mr. Geo. S. Comstock.	1914 to 1915.
Mr. Otto T. Mallery.	1915 to ——.

6. *Secretary.*

Mr. William Lauder.	1916 to 1919.
Mr. Fred J. Hartman.	1919 to ——.

III. FUNCTIONS OF THE BOARD.

(a) *The Duty to Investigate.*

Stated in simplest terms the functions of the Board are two-fold: (1) to investigate and (2) to regulate.

The duty to investigate extends to all matters touching the enforcement and effect of the provisions of all laws of the Commonwealth, the enforcement of which is imposed upon the Department of Labor and Industry. There are no less than twenty-five such labor laws of major importance covering a wide

*Leave of absence for active military service. **Died March 2, 1920.

scope. It has not been possible to undertake a systematic study of these laws, but investigations have been made as the need arose. In making its studies, the Board has worked through the regular channels of the Department, particularly the Bureau of Inspection and the Division of Hygiene and Engineering, and the members have also made numerous personal investigations. The reports of the investigations are utilized generally in the making of regulations to improve the enforcement and to apply the provisions of the law to specific conditions.

(b) *The Duty to Regulate.*

The rules and regulations of the Board, and the amendments and the alterations thereof, may embrace, as do the investigations, all matters and subjects to which the power and authority of the Department of Labor and industry extend. A very helpful check upon such rulings is the proviso that an employer, employe or other person interested may petition for a hearing on the reasonableness of a ruling, which results generally in public hearings. The spirit of willing co-operation manifested in these meetings has led to a practice of holding public hearings upon matters of importance before adopting the final ruling so as to get the advice and the sanction of the people concerned from the beginning. This procedure was definitely decided upon in 1919 in connection with the revision and the formulation of Safety Standards. The regulations of the Board may be classified as

(1) General Rulings, which are separate or individual rulings applying to specific conditions which may arise in the enforcement and effect of a Labor Law.

(2) Safety Standards which are codifications of safety rules applying to a single industry or occupation.

(c) *Duties as Specified in Particular Laws.*

Although the functions of the Board embrace all the labor laws of the Commonwealth under the jurisdiction of the Department of Labor and Industry, the legislature at various times, has enacted laws specifying definitely the duty and authority of the Board. The following is a complete statement of such duties in the language of the Acts themselves:—

(1) *Act of 1915, No. 177, Child Labor Law.*
Section 5, Paragraph 4. "In addition to the foregoing, it shall be unlawful for any minor under eighteen years of age to be employed or permitted to work in any other occupation dangerous to life or limb, or injurious to the health or morals, of the said minor, as such occupations shall, from time to time, after public hearings thereon, be determined and declared by the Industrial Board of the Department of Labor and Industry: Provided, That if it should be hereafter held by the courts of this Commonwealth that the power herein sought to be granted to the said board is for any reason invalid, such holding shall not be taken in any case to affect or impair the remaining provisions of this section."

(2) *Act of 1915, No. 327, Amendment to Woman's Labor Law of 1913.*
Section 3, Paragraph (a). "Subdivision of the Day of Rest." "That the one day of holiday in seven may be subdivided into two days of twelve hours each, for women employes in hotels, boarding houses, and in charitable, educational and religious institutions, at the discretion of the Industrial Board of the Department of Labor and Industry."

(3) *Act of 1915, No. 373, Creation of Employment Bureau.*
Section 12. "Powers and Duties of the Industrial Board." "The board shall—
(a) Devise plans and take steps toward the regularization of employment in the industries and seasonal trades of the State.
(b) Investigate the feasibility of, and induce the State, counties, cities, boroughs, towns and townships to undertake, public improvements during the period of unemployment.
(c) Co-operate with any persons, employer, official, association, or organ of the press whatsoever, for the accomplishment of the aforesaid purposes; appoint sub-committees for juveniles, farm laborers, and for other purposes; and the membership of these sub-committees may be enlarged to include persons outside the board, but each sub-committee must be presided over by a member of the board."

(4) *Act of 1915, No. 421, Printing and Distribution of a Building Code.*

"A Joint Resolution (authorizing the printing of the report of the Pennsylvania State Building Code Commission by the Industrial Board of the Department of Labor and Industry).

Section 1. Be it resolved by the Senate and House of Representatives of the Commonwealth of Pennsylvania in General Assembly met, That the Industrial Board of the Department of Labor and Industry is hereby authorized to cause to be printed, as a bulletin of said board, the report of the Pennsylvania State Building Code Commission, recently placed in the hands of the Governor. Said printing shall be done by the State Printer, on the order of the Superintendent of Printing and Binding, and on requisition of the Commissioner of Labor and Industry. The edition shall be in paper covers and shall not exceed five thousand copies in number. The copies of the report shall be distributed by the Industrial Board among the citizens of Pennsylvania in such manner as to secure for the report the widest circulation praeticable in the State."

(5) *Act of 1917, No. 96. Motion Picture Act.*

Section 3. "Any person who shall believe the specifications set forth in sections one and two of this act will work unnecessary hardship upon him, or do not in the best manner provide for the safety and health of the operators of the moving picture machines, or users of a building, as described in the foregoing sections of this act, may appeal to the Industrial Board of the Department of Labor and Industry for relief. The said Industrial Board may, after due investigation of the ground for such appeal, and not less than one public hearing, order such modifications as will best accomplish the intent and purposes of this act. And the said Industrial Board may make, modify, or repeal rulings related to the safety and health of employes and users of such buildings, where nothing hereinbefore provided covers, or where the intent and purposes of this act can be better obtained by methods other than those herein before specified: Provided, That no ruling shall be made which does not, in the judgment of the Industrial Board, after public hearing and investigation, maintain a condition of safety and health for the employes and users of such buildings as herein described, as is intended by this act."

(6) *Act of 1917. No. 254, An Act covering the employment of women other than employed in manufacturing establishments.*

Section 1.. Be it enacted, etc., That the Industrial Board of the Department of Labor and Industry may modify the provisions of the act to which this is a supplement, governing the employment of females, except as hereinafter provided, whenever, in the opinion of a majority of the members of the said board after due hearing upon petition filed, such modification may be justified and warranted, and will not result in or tend to the injury of the public health and welfare or of the health and welfare of the females sought to be affected by such modification.

Section 2. The request for such modification shall be by written petition filed with said board, and shall contain, in addition to such provisions as said board may from time to time prescribe, a complete statement of the character of the establishment and work to be affected, the number of females employed, the modification desired, and the reason therefor, which petition shall be verified by the oath or affirmation of the applicant or of an officer thereof; any modification made by said board, pursuant to said application and in accordance with the provisions of this act, shall apply only to the particular establishment, or department thereof, referred to in said petition.

Section 3. Any person, firm, or corporation affected by any modification granted by said board as aforesaid, may, within ten days after said board has filed its opinion, appeal therefrom to the said Industrial Board; * * * whereupon said board shall proceed to the consideration thereof as in said act provided; or may, within said time, appeal to a court of common pleas of the Commonwealth of Pennsylvania in the manner now provided by law.

Section 4. Said board shall not make or decree such modification except upon the agreement of a majority of all its members, and shall file at its office at Harrisburg a written petition filed, the testimony taken, the decisions of the board, and its reasons therefor. Any modification so made may be changed or withdrawn by said board, by the action of a majority of the members thereof, or by the Commissioner of the Department of Labor and Industry whenever, in his opinion, prompt action is necessary and the attendance of a majority of the members of said board cannot be secured, upon due notice to the owner of the establishment to be affected thereby; service of which notice and of any other notice required herein may be had by mailing a copy thereof to the last known post-office address of such establishment: Provided, That whenever the said commissioner takes such action he shall immediately report the same and his reasons therefor to the said board for record.

Section 5. Nothing in this act contained shall have the effect of, or be construed as, conferring power or authority on said board or on said commissioner to increase the maximum hours of labor per week, established by the terms of the act to which this is a supplement, which maximum of hours per week shall be and remain as in said act established; and nothing in this act contained shall have the effect of, or be construed as, applying to females employed in manufacturing establishments.

Section 6. Whenever any modification, or a change or withdrawel thereof, shall have been ordered as aforesaid, detailed notice thereof shall be mailed to the establishment affected in the manner aforesaid.

Section 7. Said board shall, from time to time, prescribe rules and regulations, not inconsistent herewith, governing the preparation and filing of petitions, the manner and time of service of all notices herein required; and shall have power to administer oaths, to subpoena witnesses and to compel obedience thereto, in the same manner, with like effect, and under like penalties as are now or hereafter may be provided by law with reference to proceedings by or before said board.

Section 8. Violations of any of the terms of such modifications, or of such changes or withdrawals thereof, as aforesaid, shall be deemed a misdemeanor, and, upon conviction thereof, shall be punishable in the same manner and to the same extent as is now provided for violations of the provisions of the act to which this is a supplement.

Section 9. The members of the said board shall perform the duties herein imposed upon them without additional compensation, but may incur such reasonable expense as may be necessary to the proper administration of the provisions of this act and the enforcement thereof.

Section 10. All acts or parts of act inconsistent herewith be, and the same are hereby, repealed."

(7) *Act of 1917, No. 357, Amendment to Fire and Panic Act of 1913.*

Section 1. Ways of Egress.

Firewalks: "Such ways of egress or means of escape from fire, or firewalls, shall be in accordance with the standards drawn up by the Industrial Board of the Department of Labor and Industry."

Section 2. Theatres, Opera Houses, etc., Electrical Wiring, etc. "All electrical wiring and appliances in such buildings shall be installed according to specifications set forth in the Pennsylvania Electrical Code of rules adopted by the Industrial Board of the Department of Labor and Industry, and so maintained."

Section 5. (Adapting or Erecting of Buildings. Designs and Specifications shall be submitted.) "Provided, That the Industrial Board of the Department of Labor and Industry shall have the authority to make, amend, or repeal rules for the approval of such designs and specifications, and for carrying out the other provisions of the act: And provided, That the said Industrial Board shall have authority to receive and hear appeals of those affected by this act; and, after public hearing, may, in specific cases or classes of cases, make amend, or repeal rules for the adoption of other methods than those herein specified, where, in its judgment, such order will to better advantage enforce the intent and purpose of this act."

(8) *Act of 1917, No. 411, Emergency Public Works Commission.*

Section 4. "It shall be the duty of the Industrial Board of the Department of Labor and Industry, in co-operation with the various bureaus of the said department, to keep constantly advised of industrial conditions throughout the Commonwealth as affecting the employment of labor; and whenever it shall be represented to the said board by the Governor of the State, or the said board shall otherwise have reason to believe that a period of extraordinary unemployment caused by industrial depression exists in the Commonwealth, it shall be the duty of said board to immediately hold an inquiry into the facts relating thereto, and to find and report to the Governor of the Commonwealth whether, in fact, such condition does exist.

Section 5. In the event that the Industrial Board shall report to the Governor that a period of extraordinary unemployment caused by industrial depression does in fact exist within this Commonwealth, the said commission is hereby authorized to make such disposition and distribution of the said Emergency Public Works Fund, among the said several departments, bureaus, boards, and commissions of the Commonwealth, for such extension of the public works of the Commonwealth under the charge or direction thereof, including the purchase of materials and supplies necessary therefor, as shall, in the judgment and discretion of the said commission, be best adapted to advance the public interest by providing the maximum of public employment, in relief of the existing conditions of extraordinary unemployment, consistent with the most useful, permanent, and economical extension of the works aforesaid."

(9) *Act of 1919, No. 202. Amendment to Fire and Panic Act of 1913 and 1917.*

No change is made in duties enjoined upon the Industrial Board as set forth in the Act of 1917, No. 357.

IV. PROGRAM OF WORK.

A study of the functions of the Board, in the light of the nature of the work undertaken and the results achieved in the first five years, made it possible in 1919 to establish a program of work to include every possible activity of the Board and to make the division of duties such that each associate member might have definite line of service to follow. The following is the program of work as outlined by Commissioner Connelley:—

(1) Women and Children in Industry.

Mrs. Samuel Semple, Chairman.

(2) Industrial Relations.

Mr. Otto T. Mallery, Chairman.

(3) Industrial Surveys; Industrial Education, Publications, etc.

Dr. A. L. Garver, Chairman.

(4) Safety Standards and Safety Appliances.

Mr. James C. Cronin, Chairman.

To show in detail the activities of the Board from February 3, 1914 to December 31, 1919 the above outline permits of a convenient classification and will afford a basis for future reports.

1. WOMEN AND CHILDREN IN INDUSTRY.

(a) WOMEN IN INDUSTRY.

The same legislature that created the Department of Labor and Industry also enacted the Woman's Labor Law. The burden of enforcement of the

Woman's Act became a very deep concern of the new department. The timeliness of the subject also brought considerable pressure upon the department, so that it was always to the fore in every meeting of the Industrial Board. As a result of the early investigations, petitions, public hearings and discussions, a legislative amendment was passed in 1915 giving the Board certain discretionary powers in the matter of overtime work. Numerous ruling have been made since 1915 applyiug to hours of work in summer hotels, other hotels, educatioual and charitable institutions, reduction of noon hour periods in merchantile establishments, and approving the schedules of hours for the vacation months. In addition to these specific rulings made in response to petitions and applications from individual firms and iustitutions the Board has passed the following geueral rulings, which are arranged chronologically for the purpose of this report:—

RULINGS OF THE INDUSTRIAL BOARD PERTAINING TO WOMEN IN INDUSTRY.

Pursuant to Act of 1913 (No. 267), creating the Industrial Board, and the Act of 1913 (No. 466) Woman's Labor Law, and the Acts of 1915 (No. 327), and 1917 (No. 254), amending the Woman's Labor Law, the Industrial Board has made the following ruling:—

RULE W-1 *Day of Rest in Hotels and Institutions.*

(a) *Short Term Summer Hotels.* That short term summer hotels employing women shall be permitted to subdivide the day of rest, giving two half days in each calendar week.

(b) *Hotels and Institutions Employing Ten Women or Less.* That hotels and institutions employing not more thau ten women shall be permitted to treat the day of rest in any of the following modes:

1. Give one complete day of twenty-four hours in each calendar week.
2. Give twenty-four hours consecutive rest, beginning at any hour on the one day to continue until a correspondiug hour the following day.
3. Give complete day off on Sunday one week, and complete day off on week day the next week. (Variation under plan of day in each week.)
4. Give alternate Sunday off with one-half week day. Totalling two full days in each fortnight.
5. When it works no injustice to the employes, give two half holidays per week, defiuing half day as five hours consecutive service.

(c) *Hotels and Institutions Employing more than Ten Women.* That hotels employing more than ten women shall be permitted to treat the day of rest iu any of the following modes:

1. Give one complete day of rest in each calendar week.
2. Give twenty-four hours of consecutive rest beginning at any hour of the day to continue until a corresponding hour the following day.

Adopted March 16, 1916.

RULE W-2. *Separate Toilet Accommodations for Employes and General Public.*

That in application of the Woman's Law in mercantile establishments employing more than fifteen women (Section 9 of Act of 1913, No. 466) relative to wash rooms, dressing rooms and water closets, shall be interpreted as requiring such toilet accommodations for employes alone, apart from those provided for the general public.

Adopted July 5, 1917.

RULE W-3. *Summer Hotels.*

That short term hotels, operating approximately four months in the year, shall be permitted to employ women seven days a week on the basis of a seven hour day; provided, that the employes in such a hotel working more than seven hours per day shall not be scheduled under the terms of this ruling, but will be classed under the terms of the Woman's Law of 1913; provided further, that the schedule of the hours of labor shall be posted as called for by law.

Adopted July 31, 1917.

RULE W-4. *Women in Explosives Plants.*

(a) That inasmuch as it is an established fact that women are more susceptible than men to certain industrial poisons met with in the manufacture of explosives and chemicals, the employment of women in these industries shall be permitted only where the most approved methods are used for elimination of fumes and dust. The employment of women shall also be conditioned upon the employment of a woman as plant nurse, whose duty it shall be to instruct the women in safeguards to health.

(b) That the work in such plants shall be so reorganized that men shall at all time perform that part of the work which involves the lifting of heavy weights. Women shall not be required, or allowed, to lift heavy weights.

(c) That the employment of women in the handling of nitrators in the manufacture of nitro-glycerine is prohibited.

(d) That conditions of heating, lighting and ventilation, shall be maintained at the highest point of efficiency. Means shall be provided whereby puddles of water on the floor shall be eliminated—or the floors slatted—to prevent wet feet.

(e) That rest, wash, dressing and lunch rooms shall be provided in full accord with the requirements of the Woman's Law. The physical upkeep of the establishment shall be in full accord with the safety standards of the Industrial Board, Department of Labor and Industry.

Adopted September 27, 1917.

RULE W-5. *Overtime on Account of Legal Holidays.*

That in the application of the Woman's Labor Law the permission for overtime during weeks in which legal holidays occur, may be interpreted as applying to a week composed of seven consecutive days, but no such seven consecutive days' work shall exceed fifty-four hours.

Adopted November 13, 1917.

RULE W-6. *Employment of Women in Laboratories of Explosive Plants.*

That the employment of women in the laboratories of explosive plants shall be permitted.

Adopted December 11, 1917.

RULE W-7. *Testing and Reading of Gas and Electric Meters.*

That the testing and reading of gas and electric meters is not desirable employment for women and is prohibited.

Adopted June 19, 1918.

RULE W-8. *Calling Train Crews.*

That women shall not be employed as messengers for railroad corporations in calling train crews.

Adopted July 10, 1918.

RULE W-9. *Women Operating Cranes.*

That women shall not be employed in the operation of cranes, except where permission has been granted by the Industrial Board, after application by the employing concern, and inspection by qualified representative of the Department of Labor and Industry: (Note: For detailed Rules Governing the Operation of Cranes by Women, see Safety Standard of the Industrial Board applying to Cranes.)

Adopted August 14, 1918.

RULE W-10. *Bakeshop as a Manufacturing Establishment.*

That in the matter of employment of women in bakeshops after 10 P. M., a bakeshop comes within the term "Manufacturing Establishment."

Adopted September 11, 1918.

RULE W-11. *Seats for Operators of Elevators.*

That seats shall be provided for women operators in elevators wherever possible.

Adopted September 11, 1918.

RULE W-12. *Women Doing Clerical Work at Night.*

That it shall be permitted to employ women at clerical work at night as recorders, slipmakers, and weighers, providing these women are not assigned to any other non-clerical duties.

Adopted September 11, 1918.

RULE W-13. *Employment of Women in Rolling Mills in Day Work.*

That women shall be permitted to work on day work in the following occupations:

Rolling Mills.	Pull Ups
	Furnace Recorders
	Recorders at Scales
	Weighers
	Slipmakers
	Weighers Checkers
	Cover Operators
	Door Operators
	Shear Leverman
	Product Recorders
	Pit Recorders
	Mechanical Stamper
	Sheartable Operator
	Chisel Grinders
	Chisel Carriers
Open Hearth Dept.	Weighmasters
	Shippers
	Coremakers
Electrical Dept.	Armature Winders
Beam Fitting Dept.	Tape Boys
	Layers Out
	Rivet Heaters
	Markers
	Painters

Armor Dept.	Coremakers
	Grinders
	Small Lathe and Drill
	Press Operators
	Filers
	Brick Shed

Adopted September 11, 1918.

RULE W-14. *Women in Acetylene Welding.*

That women shall not be permitted to do acetylene welding.

Adopted September 11, 1918.

RULE W-15. *Women on Railroad Maintenance of Way.*

That women shall not be permitted to work on tracks and in trucking for railroads.

Adopted October 9, 1918.

RULE W-16. *Employment of Women on Street Cars.*

That the employment of women on street cars shall be permitted when conditions conform with the provisions of the Woman's Labor Law.

Adopted October 9, 1918.

RULE W-17. *Women Employed on Setting up of Blue Beds.*

(a) That women shall be permitted to be employed in lead corroding in the setting up of blue beds in the corroding stacks of the Old Dutch Process, provided, that only such buckles or lead plates are used which have not been previously corroded.

(b) Women shall not be employed in the taking down of beds after the process of corroding has been completed.

Adopted October 9, 1918.

RULE W-18. *Women as Motion Picture Operators.*

That women shall be permitted to operate motion picture machines provided they are found by examination and test to be fully competent to perform this work, with the further proviso that they, while performing their work as machine operators, are provided with clothing similar to that provided for women working in the industries and as outlined in the Woman's Clothing Code.

Adopted January 13, 1919.

RULE W-19. *Women Employed as Messengers.*

That women under eighteen years of age shall not be employed in public messenger service. (See Rule M-29, Rulings of the Industrial Board, Child Labor Act of 1915.)

Adopted February 26, 1919.

(b) THE CHILD IN INDUSTRY.

According to the official record the first question to come before the Board after its organization pertained to Child Labor. During all of 1914 the question occupied the attention of the members and through public hearings and agitation, a sentiment was crystallized which had much to do with the enactment of the Child Labor Law of 1915. This law settled many of the points at issue up until that date and very wisely left open other matters which could not be settled then in all fairness to the industries of the Commonwealth with any degree of finality. The responsibility was placed upon the Industrial Board to feel the pulse of industry and to make rulings, subject to public hearings, to meet the new conditions as they arose. While the Child Labor Law is far from being enforced satisfactorily it is gratifying to note the activity that was displayed, as evidenced by the many requests that reached the Board for rulings to cover specific conditions in the various industries. The following is a compilation of active rulings of the Board relating to the Child Labor Act taken from the minutes and arranged chronologically:

RULINGS OF THE INDUSTRIAL BOARD RELATING TO CHILD LABOR.

Pursuant to Act of 1913, (P. L. 267), creating the Industrial Board, and Act of 1915 (P. L. 177), Child Labor Law, the Industrial Board has made the following rulings:—

RULE M-1. *Minors in Industrial Schools.*

That minors under eighteen years of age learning the operation of power driven machinery, under proper supervision in industrial schools, are not purusing an occupation forbidden by the Child Labor Act.

Adopted February 15, 1916.

RULE M-2. *Minors doing Electrical Wiring.*

That outside electrical wiring is a hazardous occupation as defined by Section 5, of the Child Labor Act, and minors under eighteen years of age shall not be permitted to work at this occupation.

Adopted March 15, 1916.

RULE M-3. *Minors Operating Elevators.*

That minors under eighteen years of age shall not be permitted to operate or manage any elevator, either passenger or freight, or any other hoisting or lifting machinery or device.

Adopted April 13, 1916.

RULE M-4. *Minors in Acetylene and Electrical Welding.*

That minors under the age of eighteen years of age shall not be permitted to do acetylene or electrical welding.

Adopted April 13, 1916.

RULE M-5. *Minors Operating Wire Stitching Machines.*

That wire stitching machines shall be considered as being "hazardous" as defined in Section 5, of the Child Labor Law, and it shall be unlawful to employ minors under eighteen years of age in the operation of such machine.

Adopted June 6, 1916.

RULE M-6. *Minors Packing and Banding Cigars.*

That minors between fourteen and sixteen years of ages may be employed in the packing and banding of cigars, provided they are not employed in any other part of the cigar factory or industry.

Adopted June 6, 1916.

RULE M-7. *Minors Testing Electric Meters.*

That no minor under eighteen years of age shall be permitted to test electric meters.

Adopted August 8, 1916.

RULE M-8. *Minors Operating Emery Wheels.*

That "emery wheels" are within the classification of "polishing and buffing wheels" and no minor under eighteen years of age shall be employed or permitted to work in the operation or use of the same.

Adopted August 8, 1916.

RULE M-9. *Minors "In and About" Blast Furnaces.*

That no minor under eighteen years of age shall be employed in or about blast furnaces, re-affirming the Act of 1909, Section 2.

Adopted October 3, 1916.

RULE M-10. *Minors Serving as Apprentices in Pattern Shops.*

That minors between the age of sixteen and eighteen years shall be permitted to be employed as apprentices in pattern makers' shops.

Adopted April 10, 1917.

RULE M-11. *Minors in Wholesale Liquor Houses, Clubs, Hotels, etc.*

The following occupations are hereby determined and declared to be injurious to the health and morals of minors, under the age of eighteen years, and therefore unlawful for employers to permit any such minor to work therein:

"Handling of case goods, barrelled goods, and other heavy materials in wholesale liquor stores.

"Any other occupations in wholesale liquor stores.

"Serving, handling or care of alcoholic liquors in clubs, hotels, or other places where alcoholic liquors are dispensed or stored."

Adopted April 10, 1917.

RULE M-12. *Female Minors Operating Cranes.*

That no female minor shall be permitted to operate a crane.

Adopted April 10, 1917.

RULE M-13. *Minors on Blue Print Machines.*

That employment of minors between the ages of sixteen and eighteen years on blue print machines does not come within the meaning of the Child Labor Law.

Adopted May 3, 1917.

RULE M-14. *Minors in Steel Mills (Roll Tables, Roll Cars, Greasers).*

That minors under eighteen years of age shall not be employed on machines or processes in connection with roll tables, roll cars, nor as greasers in rolling mills.

Adopted June 11, 1917.

RULE M-15. *Minors in Steel Mills.*

That the following occupations are permissible for boys between sixteen and eighteen years of age:

Test boys, provided they do not engage in taking samples,
Messenger Boys,
Shippers,
Door Operators,
Weighmasters,
Water Carriers,
Soaking Pit Cover Operators,
Shear Gauge Boys,
Transfer Tables.

Adopted June 12, 1917.

RULE M-16. *Minors in Machine Shops.*

That the working upon machine tools in machine shops is considered hazardous employment and is an occupation in which minors between the ages of fourteen and sixteen years should not be engaged, except where the conditions are in accord with the standards of the Industrial Board, and where such minors have adequate supervision and attention; provided that this ruling shall not effect the provisions of any rules of the Industrial Board with regard to specific machines or classes of machines.

Adopted June 12, 1917.

RULE M-17. *Minors Installing and Removing Electric Light and Power Meters, Inside Wiring.*

That minors between sixteen and eighteen years of age shall be allowed to work at installing and removing electric light and power meters and do inside wiring, provided they are acting as assistants to a trained electrician over

twenty-one years of age, and in general shall be allowed to act as an apprentice or assistant to an electrical engineer over twenty-one years of age; and provided further that the above shall refer only to low voltage installations.

Adopted June 12, 1917.

RULE M-18. *Education and Charitable Institutions Where Work is Done for Profit.*

That all institutions of an educational of charitable nature where work is conducted for profit must conform to the Child Labor Law.

Adopted June 12, 1917.

RULE M-19. *Minors Employed in Blast Furnace Laboratories.*

That minors between the ages of sixteen and eighteen are permitted to be employed as assistants to chemists in laboratories of Blast Furnaces providing they do not engage in taking samples. See Rule M-9 and Rule M-15.

Adopted June 12, 1917.

RULE M-20. *Minors Employed when Attending Industrial School.*

That wherever any establishment provides and maintains a part time industrial school for the education of minors between the ages of fourteen and sixteen years, said minors may be employed at such occupations that are not specifically prescribed as hazardous in Section 5 of Act 177 (P. L. 1915), or which have not been declared as such. Provided that the minors are at all times under the special supervision and instruction of competent foremen and where all machinery is properly guarded according to the rules of the Industrial Board of the Department of Labor and Industry.

In all such instances the provisions of the Child Labor Act concerning continuation schools may be complied with in any one of the following methods:

"1. The instruction for eight hours a week may be given in the school conducted by the employer.

"2. Shop instructions may be given in the shop for four hours a week, the remaining four hours of instruction may be given in the public continuation school.

"3. All of the instruction may be given in the public continuation school; provided that in all cases, the instruction given in the shop shall be under the supervision of the Bureau of Vocational Education, of the State Board of Education, and shall comply with the rules and regulations of the Bureau governing such schools."

It is also provided that in all part-time industrial schools the rules and regulations governing hours of labor, attendance at school, employment certificates, etc., as mentioned in said Act shall be complied with.

Adopted July 10, 1917.

RULE M-21. *Minors in Tanning Establishments.*

That no minor under eighteen years of age shall be employed in any tanning establishment where the employment specifically pertains to the tanning process.

Adopted September 11, 1917.

RULE M-22. *Minors as Section Hands.*

That the employment of minors under eighteen years of age as section hands is prohibited.

Adopted September 11, 1917.

RULE M-23. *Mentally Deficient Children—Employment Certificates.*

That employment certificates issued to mentally deficient or substandard children by the Department of Public Instruction shall be accepted by the Department of Labor and Industry.

Adopted September 27, 1917.

RULE M-24. *Minors in Bowling Alleys—Y. M. C. A.*

That the employment of minors in bowling alleys of the Y. M. C. A. or other institutions of a similar character is subject to the regulations of the Child Labor Law.

Adopted November 8, 1917.

RULE M-25. *Minors Heating and Passing Rivets.*

That minors under sixteen years of age shall not be permitted in the occupation of heating and passing rivets. The manager of a plant or his authorized representative, shall be required to make such examination of applicants as will insure that only minors mentally and physically fit shall be employed.

Adopted July 10, 1918.

RULE M-26. *Minors in Quarries.*

That the employment of minors under eighteen years of age in quarries is classed as a dangerous occupation, and is prohibited.

Adopted July 10, 1918.

RULE M-27. *Minors in Explosive Establishments.*

That the employment of minors under eighteen years of age in establishments where black powder (all varieties), dry guncotton, nitro-glycerine, dynamite, chlorates, fulminates, picric acid, fireworks and any of their compounds or mixtures or any other substances which are subject to explosion by the aid of shock, friction spark or heat, are manufactured, handled or stored, is prohibited. (Smokeless powder, wet guncotton, and wet nitro-starch, while not properly classed with the above as explosives, are also included.)

Adopted October 9, 1918.

RULE M-28. *Call Boys on Railroad.*

That minors over sixteen years of age can be employed as call boys for railroad companies.

Adopted January 13, 1919.

RULE M-29. *Female Minors as Messengers.*

That female minors under eighteen years of age shall not be employed in public messenger service.

Adopted February 26, 1919.

RULE M-30. *Minors as Motion Picture Operators.*

That minors under eighteen years of age shall not be permitted to operate a motion picture machine.

Adopted March 11, 1919.

2. INDUSTRIAL RELATIONS.

While the entire program of work of the Board might very properly be included under the caption of Industrial Relations, the term is used here in its more restricted sense. It includes the generally accepted conception which embraces the larger and not so tangible problems of industry such as employment and unemployment, industrial disputes, industrial management or co-operation between employers and employes, and the like.

(a) EMPLOYMENT.

The most notable service rendered by the Board in this connection was the practical assistance it rendered in the establishment of the Bureau of Employment as a part of the Department of Labor and Industry. Employment of women and war-time employment also receive due attention. It was largely due to the stress put upon unemployment by the Board that led to the passage of the Public Works Emergency Act by the Legislature of 1917. Early in

1919 the Board, in accordance with the bill, sent notice to the Governor to consider invoking the powers of the bill in what seemed an eminent industrial depression period. An interesting query that arose in 1917 had to do with what may be considered as safe employment for non-English speaking people. The following general ruling on this subject was adopted July 5, 1917:

> "That no person shall be permitted to labor in any group employment in a position of command or obedience, who is unable to speak or understand the language of his or her co-laborers, whereby, through misunderstanding, accident and injury are apt to result to fellow-workers."

(b) INDUSTRIAL DISPUTES.

This phase of industrial relations was first taken up in 1916 when one of the members was authorized to make a study of a strike situation in Pittsburgh. A similar study was made later in Wilkes-Barre. A ruling was passed to the effect that when a strike situation became so serious as to require the presence of the State militia a member of the Board shall get on the ground and make a thorough investigation with the purpose of discovering the causes of industrial disputes. During the war-period the Board urged that both the employer and the employe strain every effort in maintaining industrial peace. In 1919 an analysis of the labor movement in Pennsylvania was made by one of the members but action on this was postponed due to the interstate nature of the disturbances of the after-the-war period. Enough work along this line has been begun, however, to prepare the way for an aggressive movement in the future.

(c) CO-OPERATION OF EMPLOYERS AND EMPLOYES.

In the matter of co-operation between employers and employes within a plant the Board waged an active campaign in behalf of organizing for safety by actually visiting many of the plants and taking the matter up directly with labor organizations. During the period of six months from July 1, 1916 to January 1, 1917, about 1,700 manufacturers of the State and 400 labor organizations responded favorably to the appeal. The Board recognizes that the Safety appeal is a direct step in bettering industrial relations.

Another method of approach which proved successful was a campaign in behalf of Americanization.

The whole subject of industrial relations, of which but a start has been made, will be stressed under the new plan of work.

3. INDUSTRIAL SURVEYS, EDUCATION, PUBLICATIONS.

(a) SURVEYS.

(1) TOBACCO INDUSTRY, CHILDREN IN INDUSTRY.

The Board has conducted numerous surveys in connection with Safety work, on matters of employment, and of special conditions which arose in connection with its work. One of the very earliest studies was that of the tobacco industry of Pennsylvania. The report was published in the bulletins of the department and served as a basis for several rulings. The Child Labor Act of 1915 brought up the question regarding employment certificates for children and the Board authorized a survey by the Division of Hygiene and Engineering. The report known as Physical Standards and Qualifications Applied to Children requesting Employment Certificates, approved December 1915, resulted,

(2) COLORED POPULATION IN PENNSYLVANIA.

In some respects the most important survey authorized by the Board was that of the Colored Population in Pennsylvania. This was undertaken because of large numbers of colored people who came to the State of Pennsylvania from various parts of the country during the years 1915-1918. The completed survey which is the form of a voluminous report sets forth the approximate population of colored people in the State, the migration during the war, its sources and causes; a general outline of employment, health, social organization, education, crime and other conditions among our colored population in general and particularly in the centres where they reside in large numbers. This report was never published for various reasons, up to the present date.

(3) CO-OPERATIVE SURVEYS.

Two interesting co-operative surveys were made. A study by the Bryn Mawr College Alumnae on the Fire Prevention work and a survey of Industrial Home work in Pennsylvania by the department, the Consumers' League of Eastern Pennsylvania and the Corola Woerishoffer Department of Social Economy and Social Research, Bryn Mawr College. The former is of interest because of its bearing upon rules issued by the Board forbidding smoking in workshops and factories where readily combustible material is handled or stored; and the forbidding of carrying of matches and smoking utensils into cereal mills and into powder mills. The Industrial Home Work report was made just before our entrance into war and bears upon the matter of women and children home-workers. This latter report was not submitted for publication to date.

(b) PUBLICATIONS.

The publications of the Industrial Board include safety standards, of which thousands have been distributed, and bulletins applying to rulings and the various surveys. The Board was required by law to have printed and distributed the report of the Pennsylvania Building Code Commission. This was complied with in 1916, but nothing definite has been done towards securing an adequate code for the state by subsequent legislatures.

(c) EDUCATION.

In addition to educational campaigns in the interest of safety, Americanization, thrift, etc., the Board was sponsor for the enactment of a very important clause in an amendment made by the 1919 legislature to the Public School Act of 1911 requiring the "instruction in safety first methods, in the Public Schools of the Commonwealth."

4. SAFETY STANDARDS AND SAFETY APPLIANCES.

1. SAFETY STANDARDS.

(a) MAKING A SAFETY STANDARD.

It is of course fitting that Safety, the paramount objective of the Department of Labor and Industry, should receive a great deal of attention from the Board. The necessity of furnishing the inspectors of the department with uniform standards or rules to guide them in their work and of giving the employer and employe the information regarding their responsibility in making industry safe led to the making of Safety Standards. In this work the Board has been

a pioneer and much credit is due Mr. George S. Comstock, member of the Board from 1914 to 1915, for his efforts along this line. From the outstart the Board called together representatives of the various industries concerned, employers, employes, safety engineers, members of Engineering Societies, the Bureau of Standards, and goverument officials of other states to assist in formulating its codes. Before final adoption the tentative draft is submitted for public hearings in various parts of the Commonwealth for criticism. A Safety Standard thus represents a co-operative effort on the part of persous who know aud who are directly concerned in its application. This method of procedure has brought to the service of the Commonwealth hundreds of persons, without auy expense to the Commonwealth, who in a very real sense become enforcement officers, making the enforcement upon the part of the departmeut a comparatively easy matter. Experience of the past six years has shown that rules or standards of this sort, being more flexible than laws passed by the legislature, in the sense that modifications or suspension may be secured readily, tend to create the most friendly relations between industry and government and betweeu employer and employe. The following is the list of completed codes to December 31, 1919:—

CODES ISSUED BY INDUSTRIAL BOARD.

Name.	Adopted
Power Transmission Machinery,	Dec. 4, 1914
Standard Railings and Toe Board,	Dec. 4, 1914
Stationary Steam Engines,	Dec. 4, 1914
Machine Tools,	Dec. 4, 1914
Forging and Stamping,	Dec. 4, 1914
Polishiug and Grinding,	Dec. 4, 1914
Compressed Air,	Dec. 4, 1914
Woodworking Machinery,	Dec. 4, 1914
Bakeshops,	Dec. 4, 1914
Fire Prevention,	Jan. 21, 1915
Canneries,	Feb. 24, 1915
Boilers,	May 27, 1915
Foundries,	Aug. 18, 1915
Ladders,	Nov. 5, 1915
Cereal Mills,	Feb. 24, 1915
Lighting,	Apr. 13, 1916
Elevators,	Apr. 3, 1916
Explosives,	Nov. 1, 1916
Cranes,	Apr. 10, 1917
Electric,	Aug. 8, 1916
Lead Corroding and Oxidizing,	Apr. 10, 1917
Paint Grinding,	Apr. 10, 1917
Dry Color Industry,	Apr. 10, 1917
Nitro and Amido Compounds,	Apr. 10, 1917
Brewing and Bottling,	July 24, 1917
Motion Picture Machines,	Sept. 11, 1917
Scaffolding,	Nov. 11, 1917
Plaut Railways,	Apr. 16, 1918
Shop Clothing for Women,	Apr. 16, 1918
Printing and Allied Industries,	Aug. 14, 1918

(c) CODES UNDER CONSIDERATION.

In addition to the completed codes the Board has been requested to furnish codes on the following subjects, some of which have already been drafted in tentative form: Textiles, Eye and Head Protection, Sanitation, Building and Housing, Quarrying and Clay Mining, Tunneling, Confectionery, Refrigeration, and Laundries.

(d) REVISION OF CODES.

During the latter part of 1919 the Board voted to revise all of the completed codes to bring them up-to-date with the new demands of industry resulting from the war and reconstruction periods. The first revision meetings were called in December 1919.

2. SAFETY APPLIANCES.

The drafting and issuing of safety standards led to the official approving of devices as safe for the industries of the Commonwealth. An Approvals Committee was appointed in 1916 and up until 1919 approved 139 devices. During 1919 along with the reorganization of the Board the Approvals Committee changed to a smaller body consisting of a member of the Board as Chairman, the Chief of the Bureau of Inspection, the Chief of the Division of Hygiene and Engineering and the Secretary of the Board as Secretary of the Committee.

The following Method of Procedure was adopted to govern approvals:—

APPROVAL OF DEVICES.

In order to secure the official approval of any device the following is the method of procedure:

1. A written application with a description of the device must be sent to the Secretary of the Industrial Board, Keystone Building, Harrisburg, Pennsylvania;

2. Accompanying the application there must be a working model of the device or the device itself, the transportation charges being prepaid by the applicant;

3. Two (2) UNMOUNTED photographs of the device 8″ x 10″ must also accompany the application; and

4. If the device has been approved by the Underwriters' Laboratories a copy of this approval must be sent to the Secretary.

This device, if approved and a Certificate is issued by the Department of Labor and Industry, shall become the property of the State of Pennsylvania and may be exhibited in the Museum of Safety Appliances; otherwise it will be returned at the expense of the applicant.

(b) SAFETY MUSEUM.

Another step in advance during 1918-1919 was the beginning of a Safety Museum, a matter which had been discussed for several years. The present museum houses 139 devices for which Certificates of Approval were granted by the Board. The location and facilities are far from ideal but a start has been made. It is hoped that better quarters will be secured and a laboratory be provided adequate for testing. A complete list of the safety appliances approved to date are:—

(c) LIST OF APPROVED SAFETY APPLIANCES.

I. BOILER APPLIANCES.

WATER GAUGES AND WATER COLUMNS.

Boiler Water Gauge
Northern Tool Company, Inc.,
Utica, New York.

Approval No. 6.

"Oswego Safety Water Column
Pitts & Kitts Mfg. & Supply Co.,
New York City, New York.

Approval No. 16.

"Ironclad" Water Glass Reflector or Gauge for Boilers.
Sargent Company,
Chicago, Illinois.

Approval No. 46.

AUTOMATIC SHUT-OFF DEVICES FOR WATER GAUGE GLASSES.

Lagonda Automatic Stop and Check Valves.
The Lagonda Manufacturing Co.,
Springfield, Ohio.

Approval No. 49.

Automatic Shut-off for Water Gauge Glasses.
L. I. Breakey,
Marshall, Mich.

Approval No. 104.

GAUGE GLASS GUARDS.

Gardner "I-Gard" Shield and Reflectors or Gauge for Boilers.
Gardner Grate Company,
Boston, Mass.

Approval No. 17.

Boiler Gauge Glass Protectors.
Reiber-Gibbs Company,
Pittsburgh, Penna.

Approval No. 57.

Boiler Gauge Glass Guard.
Safety Appliance Company,
Newtonville, Mass.

Approval No. 107.

II. ELEVATOR APPLIANCES.

MECHANICAL INTERLOCKS (DOOR UNIT SYSTEMS).

"Ritter" Interlock
Elevator Safety Appliance Co.,
Philadelphia, Pa.

Approval No. 11.

Shur-Loc Elevator Safety Device
Shur-Loc Elevator Safety Co.,
63 Park Row, New York City, N. Y.

Approval No. 12.

Standard Elevator Safety Device
Standard Elevator Interlock Co.,
Philadelphia, Pa.

Approval No. 13.

The Jenkins Mechanical Interlock
Jenkins Interlock Mfg. Co.,
Philadelphia, Pa.

Approval No. 21.

The Universal Interlock
Universal Protective Appliance Co.,
New York City, N. Y.

Approval No. 87.

M. C. K. Elevator Locks
Elevator Locks Company,
Peoria, Ill.

Approval No. 88.

ELECTRICAL MECHANICAL INTERLOCKS—(Shaft-Unit Systems).

"ES" Positive Electro-Mechanical Interlock of the Bar Lock Type
Elevator Supplies Co., Inc.,
Hoboken, N. J.

Approval No. 99.

Combination Door-Lock and Switch for Elevators
Kaestner & Hecht Co.,
Chicago, Ill.

Approval No. 106.

DEVICES APPLICABLE TO AUTOMATIC ELECTRIC PUSH BUTTON ELEVATORS.

Interlock
The Haughton Elevator & Machine Co.,
Toledo, Ohio.

Approval No. 109.

Interlock for Push Botton Elevators.
The Warner Elevator Mfg. Co.,
Cincinnati, Ohio.

Approval No. 121.

Elevator Door Locks
Marshall Brothers Co.,
Pittsburgh, Pa.

Approval No. 123.

Electrical-Mechanical Interlocking Device for Electric Push Button Elevators
American Elevator & Machine Co.,
Louisville, Ky.

Approval No. 125.

APPROVED CABLE FASTENINGS.

Cable Fastening for Elevator Cable. "Crossby Clamp."
Albro Clem Elevator Company,
Philadelphia, Pa.

Approval No. 23.

The Keator Cam-Clip
The Keator Clamp Co.,
Dayton, Ohio.

Approval No. 122.

SEMI-AUTOMATIC GATES

Semi-Automatic Elevator Safety Gate for Freight Elevators.
Martin Moul
Wire Cloth Company, Hanover, Pa.

Approval No. 101.

COMBINED HAND ROPE LOCKS AND AUTOMATIC STOPS FOR FREIGHT ELEVATORS.

Angell Locking System
Angell Elevator Lock Co.,
Boston, Mass.

Approval No. 10.

III. MECHANICAL APPLIANCES.
(MACHINE AND WOODWORKING GUARDS.)

MECHANICAL APPLIANCES AND MACHINE GUARDS "SAFETY" LOOM LOCKS.

Safety Loom Lock
Edward Warburton,
Philadelphia, Pa.

Approval No. 3.

The Warburton Loom Lock
Edward Warburton,
Philadelphia, Pa.

Approval No. 108.

PRINTING PRESS GUARDS.

The Brandt Sav-U Press Guard
Pratt Food Company,
Philadelphia, Pa.

Approval No. 19.

Guard for Printing Press
W. H. Sylvester & Son,
Philadelphia, Pa.

Approval No. 117.

Guard for Printing Press
"Gene" Turner,
Cleveland, Ohio.

Approval No. 118.

The Stier's Safety Guard for Printing Press.
The Stier's Corporation,
New York City, N. Y.

BELT SHIFTING DEVICES

Safety First Belt Shifter
The Ready Tool Company,
Bridgeport, Conn.

Approval No. 35.

The Sharples Cone Pulley Belt Shifter.
The Sharples Milker Company,
West Chester, Pa.

Approval No. 39.

"SAFETY" POWER TABLES AND FINGER GUARDS.

Safety Power Table
Safety Machinery Co.,
New York City, N. Y.

Approval No. 38.

Gardner Finger "Gards" for Power Sewing Machines.
Gardner Grate Company,
Boston, Mass.

Approval No. 103.

Singer Safety Power Tables
Singer Sewing Machine Company,
Singer Building, New York City, N. Y.

Approval No. 126.

"SAFETY FEED AND DISCHARGE DEVICES FOR PUNCH PRESSES.

Safety Roller Feed for Punch Press
Westinghouse Electric Co.,
East Pittsburgh, Pa.

Approval No. 64.

Automatic Feed and Discharge for Punch Press
Westinghouse Elec. & Mfg. Co.,
East Pittsburgh, Pa.

Approval No. 65.

Hand Pickers for Lifting Punching into and out of Press
Westinghouse Elec. & Mfg. Co.,
East Pittsburgh, Pa.

Approval No. 74.

MISCELLANEOUS.

Metal Guards
Noe Wadlow Company,
Philadelphia, Pa.

Approval No. 2.

Safety Hopper Car Wrench
The Safety Wrench & Appliance Co.,
Philadelphia, Pa.

Approval No. 43.

Valley City Adjustable Protection and Exhaust Hoods
Valley City Machine Works,
Grand Rapids, Mich.

Approval No. 44.

Safety Collar for Emery Wheel
Safety Emery Wheel Company,
Springfield, Ohio.

Approval No. 45.

Simplex Shaper Guard and Hold-Down
Zeiller & Nagel,
Brooklyn, N. Y.

Approval No. 54.

Safety Guard for Gang Press
Westinghouse Electric Co.,
East Pittsburgh, Pa.

Approval No. 67.

Suction Device for Handling Sheet Metal
Westinghouse Elec. & Mfg. Co.,
East Pittsburgh, Pa.

Approval No. 73.

Lathe Dog
J. H. Van Middleworth, Lawrence Portland Cement Co.,
Northampton, Pa.

Approval No. 90.

GUARDS FOR WOOD-WORKING MACHINERY
CIRCULAR, RIP AND CROSS CUT SAW GUARDS.

Surty Safety Device for Circular, Rip or Cross
Surty Guard Company,
Chicago, Ill.

Approval No. 28.

No. 2 Type "Wire Hood"—Circular Saw Guard
Zeiller & Nagel,
Brooklyn, N. Y.

Approval No. 52.

No. 3 Type "Wire Hood"—Circular Saw Guard
Zeiller & Nagel,
Brooklyn, N. Y.

Approval No. 53.

Guard for Cross Cut Saw
Westinghouse Elec. & Mfg. Co.,
East Pittsburgh, Pa.

Approval No. 62.

SAFETY CYLINDERS AND CLYINDER HEADS.

The Stutzman Round Cylinder Heads
Mr. Frank Stutzman,
Williamsport, Pa.

Approval No. 26.

Oliver Circular Safety Cylinder
Oliver Machinery Company,
New York City, N. Y.

Approval No. 89.

WOOD SURFACERS, DRILLS, REAMERS AND JOINTERS.

Section Safety Guard for Wood Surfacer
Hermance Machine Co.,
Williamsport, Pa.

Approval No. 40.

Circular Cover for Wood Drill and Reamer
Westinghouse Elec. & Mfg. Co.,
East Pittsburgh, Pa.
Approval No. 59.

Flexible Roller Guard for Rear of Wood Jointer
Westinghouse Elec. & Mfg. Co.,
East Pittsburgh, Pa.
Approval No. 60.

IV. ELECTRICAL APPLIANCES.

SWITCHES

Krantz Safeiy Enclosed Auto-Lock Switches
Krantz Manufacturing Co.,
Brooklyn, N. Y.
Approval No. 34.

Square "D" Iron Clad, Enclosed Switch
Square "D" Company,
Detroit, Mich.
Approval No. 36.

Safety Enclosed Lever Switches
Geneeral Electric Company,
Schenectady, N. Y.
Approval No. 78.

Safety Enclosed Lever Switches
General Electric Company,
Schenectady, N. Y.
Approval No. 79.

Type "DF" V. V. Safety Switch
V. V. Fittings Co.,
Philadelphia, Pa.
Approval No. 114.

PANELS.

Safety Enclosed Removable Truck Type Panels
General Electric Compauy,
Schenectady, N. Y.
Approval No. 75.

Safety Enclosed Steel Switching Cabinets
General Electric Company,
Schenectady, N. Y.
Approval No. 76.

Safety Enclosed Unit Stationary Type Panels
Geneeral Electric Company,
Schenectady, N. Y.
Approval No. 77.

Krantz Safety Auto-Lock Control Panel
Krantz Manufacturing Co.,
Brooklyn, N. Y.
Approval No. 85.

CONTROLLERS AND STARTERS.

Auto Transformer Starter Bulletin 9141
The Cutler Hammer Mfg. Co.,
New York City, N. Y.
Approval No. 129.

APPROVED TOOLS FOR CENTRAL STATION ATTENDANTS AND ELECTRICAL WORKERS.

Wooden Tongs for High Voltage Fuses
Westinghouse Elec. & Mfg. Co.,
East Pittsburgh, Pa.
Approval No. 71.

Safety Screw Drivers
Westinghouse Elec. & Mfg. Co.,
East Pittsburgh, Pa.
Approval No. 72.

MISCELLANEOUS

The Simplex Surface Contact System
Simplex Surface Contact Co.,
Williamsport, Pa.
Approval No. 1.

Safety Device for Electrically Driven Tools.
Jos. Osborn,
St. Louis, Mo.
Approval No. 42.

The Thompson Safety Disconnecting Hanger
The Thompson Electric Co.,
Cleveland, Ohio.
Approval No. 95.

ZY Condulet
Crouse-Hinds Company,
Syracuse, N. Y.
Approval No. 100.

Edison Electric Safety Mine Lamp
Mine Safety Appliance Co.,
Pittsburgh, Pa.
Approval No. 102.

Electrical Connector
Westinghouse Elec. & Mfg. Co.,
East Pittsburgh, Pa.
Approval No. 120.

V. MOTION PICTURE APPLIANCES.

FILM REWINDERS AND BOXES.

The Horting Rewinder
Automatic Film Rewinder Co.,
Harrisburg, Pa.
Approval No. 5.

Fuleo Fire Proof Enclosed Rewind.
E. E. Fulton Company,
Chicago, Ill.
Approval No. 111.

Argo-Ideal Fireproof Film Box
E. E. Fulton Company,
Chicago, Ill.
Approval No. 112.

APPROVED MOTION PICTURE MACHINES PROJECTORS AND MECHANISM.

Premier Pathescope
The Pathescope Co.,
New York City, N. Y.
Approval No. 7.

Motion Picture Machine
Atlas Educational Film Co.,
Chicago, Ill.
Approval No. 8.

Victor Safety Cinema Motion Picture Machine
United Projector and Film Co.,
Buffalo, N. Y.
Approval No. 127.

VI. SANITARY AND FIRST AID APPLIANCES.

SANITARY TOILETS.

The Kaustine Chemical Toilet
Kaustine Company,
Buffalo, N. Y.
Approval No. 14.

The Waterbury Sanitary Indoor Closet
The Waterman-Waterbury Co.,
Minneapolis, Minn.
Approval No. 31.

Cottage Type "Sanitor" Closet
West Disinfecting Co.,
New York City, N. Y.
Approval No. 32.

The Wolverine Indoor Toilet
Dail Steel Products Co.,
Lansing, Mich.
Approval No. 94.

The Waterbury Sanitary Caustic Closet
The Waterman-Waterbury Co.,
Minneapolis, Minn.
Approval No. 130.

Smith Sanitary Chemical Closet
Smith System Heating Co.,
Minneapolis, Minn.
Approval No. 131.

Pease Chemical Toilet Co.
Pease & Co., Inc.,
Springville, N. Y.
Approval No. 132.

The Perfection Chemical System
Chemical Toilet Corp.,
Syracuse, N. Y.
Approval No. 133.

VENTILATORS.

"Swartout" Ventilator
The Ohio Body and Blower Co.,
Cleveland, Ohio.

Approval No. 9.

VII. FIRE PREVENTION AND PROTECTIVE APPLIANCES.

Evans "Almetl" Fire Doors
Merchant & Evans Co.,
Philadelphia, Pa.

Approval No. 4.

"Panik Prufe" Door
National Automatic Door Co.,
Chicago, Ill.

Approval No. 41.

Von Duprin Self-Releasing Fire Exit Door
Vonnegut Hardware Co.,
Indianapolis, Ind.

Approval No. 110.

PANIC AND FIRE EXIT BOLTS.

No. 60 x 66 Russwin Fire Exit Bolts
Russell & Erwin Mfg. Co.,
New Britain, Conn.

Approval No. 27.

Fire and Panic Escape Door Opening Device
A. S. Flowers,
Mt. Joy, Pa.

Approval No. 58.

SMOKE AND AMMONIA HELMETS AND FIRE EXTINGUISHERS.

National Smoke and Ammonia Helmet
American LaFrance Fire Engine Co.,
New York City, N. Y.

Approval No. 22.

"Fyr Fyter" One Quart Chemical Extinguisher
Fyr Fyter Company,
Dayton, Ohio.

Approval No. 33.

Pyrene Fire Extinguisher
Pyrene Mfg. Co.,
New York City, N. Y.

Approval No. 55.

One-Quart Fire Extinguisher
Johns-Manville Co.,
Philadelphia, Pa.

Approval No. 97.

Nu-Ex Fire Killer
Nu-Ex Fire Appliance Co.,
Columbus, Ohio.

Approval No. 138.

FIRE ALARM SYSTEMS.

Automatic Fire Detector and System
Interstate Finance Corp.,
Easton, Pa.

Approval No. 139.

MISCELLANEOUS.

Fireproof Receptacle
W. B. Martels & Sons Co.,
Wilkes-Barre, Pa.

Approval No. 15.

VIII. MISCELLANEOUS SAFEGUARDS AND APPLIANCES.

ANTI-SLIP TREADS.

Feralum Anti-Slip Treads
American Abrasive Metal Co.,
New York City, N. Y.

Approval No. 20.

Mason Safety Tread—Lead Filled
American Mason Safety Tread Co.,
Cleveland, Ohio.

Approval No. 81.

Mason Safety Tread—Corborundum Filled
American Mason Safety Tread Co.,
Cleveland, Ohio.

Approval No. 82.

Mason Black Diamond Safety Tread
American Mason Safety Tread Co.,
Cleveland, Ohio.

Approval No. 83.

NON-SLIP LADDER SHOES.

Mason Non-Slip Ladder Shoes
American Mason Safety Tread Co.,
Cleveland, Ohio.

Approval No. 84.

Ladder Shoe
The Morrison Ladder Floor,
Suction Grip.

Approval No. 96.

Cork Grip Ladder Shoes
Safety Service & Engineering Co.,
Cleveland, Ohio.

Approval No. 96.

LADDERS AND SCAFFOLDING.

Patent Scaffolding
Patent Scaffolding Co.,
New York City, N. Y.

Approval No. 29.

The Bent Rung Ladder
The Bent Rung Ladder & Mfg. Co.,
Indiana, Pa.

Approval No. 37.

Ladders
Welsbach Street Lighting Co.,
Philadelphia, Pa.

Approval No. 48.

LEG, FOOT, FINGER AND EYE PROTECTORS.

Leg and Foot Protectors
Wm. H. Horstmann Co.,
Philadelphia, Pa.

Approval No. 47.

The Hobbs Finger Protector
Hobbs Manufacturing Co.,
Worcester, Mass.

Approval No. 50.

The Hardy Welding Goggle
F. A. Hardy & Co.,
Chicago, Ill.

Approval No. 30.

LUBRICATORS.

The Faul Positive Lubricator
Wm. J. Faul Company,
New York City, N. Y.

Approval No. 18.

The Van Alen Lubricator
Northumberland Lubricator Co.,
Northumberland, Pa.

Approval No. 135.

POSITIVE LOCK BOLTS AND SAFETY DEVICES FOR WINDOW CLEANERS.

Safety Bolt for Window Cleaners
Westinghouse Elec. & Mfg. Co.,
East Pittsburgh, Pa.

Approval No. 66.

Positive Lock Bolt
Positive Lock Bolt Co.,
Philadelphia, Pa.

Approval No. 80.

"Whitner" 4-bolt Safety Window Cleaner Device
Chas. H. Fields Sons,
Philadelphia, Pa.

Approval No. 105.

MISCELLANEOUS.

Never Slip Safety Clamp
Never Slip Safety Clamp Co.,
New York City, N. Y.

Approval No. 25.

Small Safety Soldering Ladle
Westinghouse Elec. & Mfg. Co.,
East Pittsburgh, Pa.

Approval No. 63.

Safety Acid Jugs
Westinghouse Elec. & Mfg. Co.,
East Pittsburgh, Pa.

Approval No. 68.

Wire Guard for Large Glass Reflectors
Westinghouse Elec. & Mfg. Co.,
East Pittsburgh, Pa.

Approval No. 69.

Klaxon Industrial Horn
Klaxon Company,
Newark, N. J.

Approval No. 91.

Gas and Air Vat Dryer, also Electric Exhaust Fan
A. Gusmer, Inc.,
New York City, N. Y.

Approval No. 93.

The Keep Kool Kap
M. D. Cannon & Co.,
Newark, N. J.

Approval No. 136.

The Stuebing Lift Truck
The Stuebing Truck Co.,
Cincinnati, Ohio.

Approval No. 137.

V. WAR ACTIVITIES.

(a) WAR TIME RULINGS.

The fact that sixteen of the nineteen rulings pertaining to women in industry and seventeen of the total of the rulings relating to child labor were made during the war period affords an interesting sidelight upon a phase of the war-time work of the Board. Only two Safety Standards were issued, the Nitro Amido Compounds and Shop Clothing for Women. The Board decided that new Standards that did not apply directly to the winning of the war would be withheld until after the war. Due to the difficulties in securing Pennsylvania Standard boilers a war-time emergency ruling was made permitting second hand boilers under certain conditions to be used in the State.

(b) WAR TIME RESOLUTIONS.

A series of resolutions presented to one of the meetings is typical of a number of resolutions. One motion had to do with urging national prohibition in order to conserve food supplies. This was carried decisively. The second was in the form of a suggestion that the President of the United States and the food commissioner urge upon the Entente Allies the necessity of prohibition as a war measure. This motion was barely passed. A third motion was in favor of giving women the right of enfranchisement because of her loyalty and service in industry particularly during the war. This motion was lost with only one vote in favor of it.

(c) WAR TIME SERVICE OF MEMBERS.

Of the members of the Board Dr. John Price Jackson, Chairman, entered military service in 1917 and rose to the rank of Lieutenant Colonel. Mr. Otto T. Mallery served on the staff of the War Labor Policies Board, was Chief of

the Federal Aid and Works Section of the War Department under Colonel Arthur Woods, Assistant to the Secretary of War, was on the executive committee of the Southern Pennsylvania chapter of the American Red Cross and the executive committee of the War Camp Community Service, and also served as executive secretary of the Emergency Public Works Commission of Pennsylvania. Mrs. Samuel Semple served on the committee on "Women in Industry of the Advisory Commission of the Council of National Defense."

Whatever the service performed by the members of the Board individually or collectively it can be said without fear of contradiction that the Board upheld the interests of the Commonwealth and in no sense lowered the standards for women and children workers nor let down the bars in the carrying out of its rulings. For a fuller statement of the war work of the Board we are pleased to call attention to an excellent historical retrospect written by Mrs. Samuel Semple and which we are appending as Part II of this report.

VI. CONCLUSION.

From the foregoing it is evident that the Industrial Board has passed the experimental stage as a part of state government. It has established itself in the Department of Labor and Industry as a pathfinder and helpmate. It has held the confidence of three sessions of the Pennsylvania Legislature. Its rulings on Women in Industry and on Child Labor, and also the individual rulings on Labor Laws have been accepted without a single report to courts of law. Its safety program has kept progress with the national movement for safety and with the evolution of industry in the Commonwealth. Its Safety Standards have been copied verbatim by some states and have served as models in others. With a definite program of work, built upon the experience of the past and adjusted to present-day conditions—the Board begins 1920 with a substantial foundation of achievement.

PART II.

A RETROSPECT OF WAR TIME ACTIVITIES OF THE INDUSTRIAL BOARD

by

MRS. SAMUEL SEMPLE
Member of the Industrial Board.

On Good Friday, April 6, 1917, the United States formally entered the Great World War. On Tuesday, April 10, four days later, the Industrial Board of the Pennsylvania Department of Labor and Industry, held its first meeting under these new national conditions. Among the first items of business that came before it, urgently presented on the ground of war necessity, were certain applications for release from the provisions of the Woman's Law and the Child Labor Act of the state. These petitions were from industries that were not engaged in the manufacture of war materials nor of materials that were likely to be closely connected with the war. The fact of their presentation was, however, intimately connected with the struggle for the establishment and maintenance of laws for the protection of women and children in industrial life that had gone on in the state for considerably over a decade, and also with the efforts which the Department of Labor and Industry had put forth for the just and steady administration of those laws when obtained.

The Associated Press had that same day sent broadcast through the country the appeal from the President of the United States, and from the Council of National Defense that the observance of existing labor laws and of fine standards of labor conditions should be maintained. Those appeals were buttressed by knowledge of avoidable evils that had come upon Great Britain through an over hasty sacrifice of such laws and standards under the impression that such sacrifice was a patriotic service. While recognizing that later developments might necessitate a change in all labor policies, the Board decided that its immediate duty, in loyalty to the President and to the Council of National Defense, as well as to the trust received from its own state, was to announce a clear policy of adherence to law and maintenance of standards. This was done by the formal adoption by the Industrial Board of the policy announced by the Council of National Defense. A few days later the Governor of the Commonwealth by proclamation called upon the people of the state to uphold such a course in its industrial life. The policy thus inaugurated was steadily followed by the Industrial Board throughout the war period. As month by month the stress of production increased, the Board was more and more convinced of the wisdom of the course recommended by the President, the Council of Defense, and the Governor; and the faithful adherence to law and to standards, assumed an ever greater importance. Those first petitions to the Industrial Board for modification of the Woman's Law because of the country's war basis were the forerunners of many more, all stressing the patriotic duty of production, all complaining of the labor shortage, and all expressing the belief that the employment of women for longer hours, and at night, and increasingly in the place of men was the sole method of meeting the Industrial situation created by the war.

The Commissioner of Labor and Industry assigned to one member of the Industrial Board the duty of replying to all such correspondence concerning both the Woman's Law and the Child Labor Act. It soon became apparent that such communications belong to two classes; and as war tension increased the division between those two classes became more marked. One class desired primarily to be freed from any restriction whatever concerning the employment of women, and seized upon the war as a plausible excuse by which to attain this end. The other class faced real difficulties of adjustment in working force, and desired to receive and to give co-operation in working out the industrial problems with the state. To both classes courteous reply was made, explaining the policy which had been adopted in harmony with the request of the President and of the Council of National Defense. The conditions of the law were carefully stated, and co-operation in the announced policy was requested. In addition it was suggested that representatives of the Department might be of service to the petitioning industry in studying its special problems and making recommendations. To the credit of the petitioners it is to be stated that the majority accepted the Board's policy in a spirit of co-operation and courtesy. A few of the first class carried their petitions to Washington in the evident expectation and desire—whatever their usual attitude on state rights may have been—that the Federal government should at that time peremptorily overrule state laws. In that they were disappointed. As a matter of curious interest it may be noted that this same group of petitioners included those who objected most emphatically to the enforcement of the Federal Child Labor Law within the state.

To the petitioners of the second class the Board was anxious to give every possible assistance. Representatives of the Department were sent to study conditions, to make recommendations and to suggest adjustments that were possible within the limits of the law. It was of course perfectly apparent that employing concerns were experiencing inconvenience with their labor supply. The cessation of immigration and the withdrawal of men from industry through the draft were rapidly affecting the employment situation; and the competition for available labor was heightened by the steady pressure upon the need for production of war materials. It was not a matter for surprise that employers so often decided that women, not subject to military duty, and not accustomed to the highest wages, were the quickest and best solution to the industrial problem of the day. While, in accordance with the law, the wage question was not a determining factor in any case before the Board, it was a matter of interest to find that in practically all the cases presented women received, or would receive, lower wages than men doing the same work. Even when apparently the wage was the same, further questioning revealed the fact that the men's wage used in the comparison was the wage formerly received, not that which it would be necessary to pay to retain them.

The determining points in the decision of cases before the Board were the actual points of the Woman's Law—hours and working conditions. Longer hours than those permitted in the law and night work for women were the general points in petitions. Regarding both, the Board believed that the only sane and possible course was a strict adherence to the law; and its action followed this belief. The fact that the petition for night work for women was so often tied up with the eight hour work period—a shortened period for women workers in Penna.—made it an especially vexing matter to deal with, since it was maintained that it was impossible to secure men to work the night shift continuously, and that if women were to have the benefit of the eight hour day they must be permitted to take their turn at night work. What might have come to pass under continued war pressure in the way of modification of law cannot be guessed; but no request for permission to violate Pennsylvania law as it stood upon the statute books was granted by the Industrial Board. While most such petitions were phrased in all good faith as

requests for "modifications" of the law, there were a few that insulted the Board by asking that they should "look the other way" while the provisions of the Woman's Law were deliberately disregarded.

Practically every request for modification of the law forbidding night work for women was accompanied by the argument that since women were generally employed at night in the neighboring state of New Jersey, and in the New England states, it seemed unreasonable that Pennsylvania should continue to prohibit such night work. Such sweeping and positive statements were made on this line, with such commendation for the patriotic attitude of those states in their assistance to war production and with such implied—and occasionally open—depreciation of the Pennsylvania attitude of adherence to law, that the Board finally decided to send one of its members to investigate actual procedure and conditions as to night work and lengthened hours for women in the three states most frequently quoted, New Jersey, Connecticut and Massachusetts. It was found (contrary to general belief) that comparatively little night work was carried on by women in those states; and that the testimony as to its social effects and its industrial inefficiency where it did exist was such that the Board was more than justified in its strict adherence to the Pennsylvania law.

There came to the Board also many requests for permission to employ women in occupations where previously only men had been employed. Concerning these the Board held that employment was open to women equally with men, provided the provisions of the Woman's Law were complied with and provided the occupation did not involve a greater risk to women than to men on the actual ground of sex. Under this latter head employment in certain chemical industries was disapproved, or limited, for women, because the materials to be handled constitute a special risk for women physiologically greater than that for men; and certain other types of employment calling for the presence of women in lonely or morally dangerous situations were also disapproved. The requirements of the Pennsylvania Law as to sanitary arrangements, rest rooms, etc., where women are employed were the determining factor in the non-entrance of women into a number of industries which did receive women in considerable numbers in other states. As an example, street car employment may be cited. Street car companies which applied for permission to employ women were told that there was no reason they should not do so provided they would make the necessary arrangements under the law to insure the comfort and well being of their employed women. It was interesting that up to the time of the armistice none of the street car companies felt that the labor shortage was such as to justify them in the expense of such preparation for the employment of women.

Most of the manufacturing concerns in readjusting their working force, voluntarily prepared for the advent of women by special installations of sanitary arrangements and cloak or rest rooms. For the most part these were very simple in old plants. The new war industries often went to very considerable pains and expense to provide good accommodations for the women. Rest and recreation rooms, well run cafeterias and restaurants, were a witness to new views of industrial management in many instances; although, in many more hastily improvised arrangements were found that had to be regretfully accepted because they met the letter of the law even though its spirit was not fully complied with.

During all this period of special concern as to the maintenance of the Woman's Law the Board was also mindful of the steadily increasing need that all interests should pull together to keep the industries of the state running smoothly and efficiently. A statement was therefore, issued to the working women of the state asking that they should give their best to the industries of the state in the war

emergency, and assuring them of the sincerity of the Industrial Board in maintaining labor standards. This statement was put into poster form and distributed throughout the state under direction of the Commissioner.

Much was said and written during the war period as to the increased employment of women, and many estimates were made of such increase in Pennsylvania. The Board endeavored in a number of ways to keep in touch with the increase; but on the whole the results were not very satisfactory. Business concerns were asked to report the employment of women when such had not been the previous policy; but in the rush of war days it was not strange that most failed to do so. The inspection force of the Department was asked to make monthly reports of such increase of the employment of women as they found in their regular course of work; but here again pressure of work offered excuse for incomplete compliance. And even when conscientiously and regularly rendered such reports could each month cover only a portion of the field. One formal inquiry in the shape of a questionnaire to a considerable section of the states' industries brought a surprise in the small amount of increase that it registered as to the employment of women; and was even more surprising in the determination that it revealed not to shift to female labor if it were in any way possible to avoid it. Perhaps the most reliable estimates as to the increased employment of women in various sections of the state came to the Board from the heads of the Departments' own inspection districts. These were frankly only estimates, but were based upon a general touch with industrial organization over large areas. The estimates run from a five per cent. increase in a district where the industries were mostly of the heavy types, to a twenty per cent. increase in a region given over to lighter crafts more suitable to the strength of women. The general testimony seemed to be that the situation was better described as a shift rather than in increase of the Employment of women.

Women began to be found frequently in machine shops, in the operation of machine tools, and in some instances as mechanics. One communication to a member of the Industrial Board for a popular writer asked for information upon development of industrial employment for women, and also asked if these were not the first known instances of the employment of women upon machines. And yet that man's shoes, the cotton and woolen cloth in his suit and underwear, the silk in his handkerchief and tie, his hat, his hosiery, his gloves, were all largely the product of women's work upon machines. The war time novelty of women's work on machines lay in the material manipulated by those machines, rather than in the fact of the handling dangerous power-driven machinery in itself. The testimony of establishments employing women in what were termed the "new" occupations was that most of those women had had previous factory experience in other lines, and were drawn to these "new" occupations by the comparatively higher wages. The shift in the employment of women therefore represented for them an economic advantage that the Board was anxious to conserve for them by putting no necessary restriction upon their employment.

While the law places upon the Industrial Board no special duty as to the wage question in the state, the general commission of the Board to interest itself in the welfare of the workers led it to keep an open ear as to the wages received by women throughout the war period, especially in the so-called "new" occupations. It was a matter of surprise that rumors as to very high wages received by women—especially in munitions factories, which to the popular mind were gold mines for the workers—were so difficult of confirmation. It was impossible to avoid the conclusion that increase in wages for women was greatly over-estimated; and that the old lines of employment shared very slightly in the increase that did come through the shift of the employment of women.

In the actual increase of the employment of women that did occur some interesting experiments were tried. Probably the most conspicuous of these were the introduction of women into the service of the banks and the railroads. In both they seemed to find a permanent and fitting place, though some of the variations of their employment undertaken by the railroads were fortunately short lived. Track service, the laying of ties, handling the parcel-checking rooms, round house service were all tried by the railroads and abandoned. It seemed to be beyond dispute that in all these occupations the wage given the women was below that for men in the same service; and the fact that the women in some cases discovered this and asked for an equal wage seemed to contribute to the termination of the experiment in employing them. It is of interest to note that shortly before the armistice one railroad reported the employment of women in sixty-nine different occupations. The manufacturers of explosives were among those who desired modification of the Woman's Law as to hours and night work to permit them to employ women. They complained that in their business, with its high risks, it was increasingly difficult to secure reliable workmen. They felt that they could secure from among the women, a better type of workers if only they were freed from the restrictions of the Woman's Law. This was one of the instances where the Board sent representatives of the Department to study the situation and advise. As it was also one of the industries involving a special sex risk to women because of the substances used, the study resulted in a special set of rulings on a constructive basis, for the help of the industry, as well as for the protection of the women.

The Board instituted an inquiry through the Inspection Bureau of the Department as to what readjustments of labor force might be made in industries, that had not previously employed women, in case the war should be prolonged and the labor shortage thereby increased. The Department was thus establishing a position from which it might give intelligent direction to the increase in the employment of women that would have been necessary had the war not come abruptly to an end. On the other hand, the Board was also endeavoring to guide such increased employment by the establishment of definite standards for the work of women—standards as to lifting of weights, continuous standing, the introduction of brief rest periods to counteract nervous strain, etc. The thought was that if the war continued, the burden of industrial production would fall increasingly upon the women of the state, and that business efficiency would demand the most intelligent and careful use of that labor supply. Under this head came also an inquiry into the subject of the married women in industry in Pennsylvania. There was beginning to be evident a movement to induce married women to enter shops and factories to reinforce the labor supply. As a social factor in the life of the state, as a responsibility to a special class of women workers, and as a development of industrial life under war conditions, the Board felt it wise to make inquiry into the actual status of the employment of married women at that time. It was found to be apparently much smaller as an industrial factor in Pennsylvania than it was considered to be in many of the other industrial states. Undoubtedly the maintenance of the law prohibiting night work for women helped to reduce the employment of the married women; for in states where night work is permitted for women many of those workers are married women who feel that that is the time they can most easily spare from home cares.

A matter of continual interest to the Board was the increased commercial and **industrial employment of** negro women, most of whom were drawn from the ranks of domestic or personal service. Larger wages and an increased measure of personal freedom seemed to be the reasons for this labor shift. Much of the labor given to these women was unduly heavy, yet if offered an industrial footing not before open to them.

On the whole the opinion of the employers of the state, so far as it could be gathered, was that in general the service of women in all the new lines was satisfactory, except where physical strength was the first need. That being the case the Board felt justified in formally requesting the employers of the state to recognize the service of the women by making no discrimination against them in the matter of pay. It was also pointed out that men ought not to take advantage of such discrimination, since it was really establishing a competing force against themselves.

It is already demonstrated that questions, arising from the employment of women called for much attention from the Industrial Board during the war period. It is therefore not surprising that as a matter of convenience and thoroughness in handling such business a Woman's Division was developed within the Department. Although merely an administrative measure, not a statutory bureau, the Woman's Division was one of the busiest and most important sections of the Department during the period under review. Its duty was to keep in touch with the enforcement of the Woman's Law throughout the state, to watch the new developments of the employment of women, to investigate special cases, and to assist in such studies as the Industrial Board might plan. To it were referred also similar matters in connection with the Child Labor Act. These were second only in number and importance to those under the Woman's Law. Requests were many that modification of the law be made to allow the employment of minors as a war necessity. Here again the Board insisted upon adherence to law and standards, even when educational authorities—sharers in the responsibility of administering the Child Labor Law—joined in the request that exceptions to it be allowed. But as in the case of the Woman's Law, the Board felt that it was desirable to study the industrial field to see where young people who had reached the age when they might exercise their own discretion as to leaving school might be properly directed. Here again it was felt that this was a constructive service both to the industries and to the young people. Along this line were also studies of certain shop schools and systematic shop instruction for young people, which eventuated in ruling adopted jointly by the Industrial Board and the State Board of Education for the further development of part-time schools. Both of these lines of service might well be organized and extended for normal times.

It was during the period under consideration that the Federal Child Labor Law—afterward declared unconstitutional—went into effect. The method of enforcement of that law was the subject of a conference of federal and state labor officials held at Washington, and attended by the Pennsylvania Industrial Board. As a result of that conference the federal government for administration of the law in this state, agreed to accept the Pennsylvania working certificate as proof of a child's age; deputized the Pennsylvania Commissioner of Labor as its representative to enforce the federal law; and agreed to accept Pennsylvania inspection for the law, although reserving the right to send its own inspectors at pleasure to check up the general situation. This agreement was possible because of the similarity of the Pennsylvania and the Federal Child Labor laws in most points; and was highly satisfactory to the Board because it prevented an increase in the number of inspections to which the industrial plants of the state were liable. A set of rulings by the Board embodied the agreement and adapted the Child Labor decisions of the Federal government for use in the state under this plan. For certain investigations of the employment of minors in Pennsylvania which the Federal government through the Children's Bureau, desired to make the Board gave co-operation for a limited period by the field service of the Woman's Division.

Throughout almost the whole war period the relationship between the State Department of Labor and the Federal government was cordial and co-operative. From the beginning of the requests for exceptions to the Woman's Law, based on the urgency of the Federal government for war production, conference with the Federal Secretary of Labor was opened. His advice was clear that state laws and standards should be maintained. Later when certain decisions of the Judge Advocate General threatened to send Pennsylvania labor laws to the scrap heap, prompt action of the Acting Commissioner of Labor of Pennsylvania secured from both Secretary of War and Secretary of Navy deputizations that in effect restored the maintenance of Pennsylvania labor laws, to the care of the Pennsylvania Labor Commissioner. Representatives of the Pennsylvania Industrial Board were included in all important labor conferences at Washington and the Federal Department of Labor was most generous in sending its representatives to Pennsylvania to help in any committee or conference work.

The Industrial Board has always been the recipient of queries and complaints from many sources, some of them of a confidential character requiring special tact to follow up. Under war conditions these were multiplied. A considerable number of them came, from labor union sources, and referred to the substitution of women for men in various industries. The complainants felt that this was a deliberate policy of forcing down wages. Specific instances were alleged where women taking the places of men on automatic processes where the output could not be affected were paid a rate at least one-third lower than that given to men. As has been previously stated, Pennsylvania law does not make wages a direct matter of concern for the Department of Labor and Industry; but under the general commission of the Industrial Board to interest itself in all that relates to the welfare of the workers of the state these charges were carefully examined. In no instance brought to the attention of the Board did the investigation bear out these statements exactly as made. In every instance it was found that some readjustment of the work had been made that, at least in theory, accounted for the lower wage paid to the women. It was however, noted that in the shops the prevailing opinion was that the substitution of women, for men was largely a measure for the lowering of costs. Foremen did not hesitate to volunteer this opinion. "They'll tell you in the office that its patriotism," said one superintendent in a large plant whose ranks were being filled with women; "I'll tell you the truth—it's to save money." The experience secured in these complaints and investigations emphasized the real difficulty inherent in the task of fixing an equitable wage—especially as between men and women.

One special piece of confidential service given by the Industrial Board during the war was at the request of one of the committees under the Woman's Division of the Council of National Defense. Difficulties in the needle trades had led to the allegation of disaffection and disloyalty among those workers. It was charged that they were deliberately retarding the production of materials necessary for army equipment. The Council of Defense committee desired information as to the actual conditions of the workers that they might judge what part trade management played in causing the unrest complained of. Among other centres of the needle industries in the country Philadelphia was one of the centres in question. The Industrial Board arranged a quick survey of a cross section of the needle industry in that city covering roughly about ten per cent. of the craft. The Board did not undertake to formulate any definite findings as to the situation, but merely submitted to Washington the information which was collected. It may be generally stated however, that no indications of any definite policy of disaffection or disloyalty were found. Wages were less a source of complaint than were working conditions; and many of the working conditions found undesirable were tied up with the housing

of industries in old and sub-standard buildings. All cases of violations of law discovered in this special investigation were turned over at once to the Departments own Inspection Bureau, or to the Fire Marshal of the City of Philadelphia, according to the nature of the case.

Another careful piece of work done under the direction of the Industrial Board during this time was the result of statements of certain organizations that the Woman's Law and the Child Labor Act were being freely disregarded in Delaware County, one of the busiest industrial counties of the state. This complaint came to the Industrial Board from the Woman's Section of the State Safety Committee. A number of women inspectors, under the direction of the Woman's Division of the Department, were sent into Delaware County to check up the whole situation. Reports of findings were submitted; violations of law were called to the attention of the Inspection Bureau for correction; and communication with the Department of Public Instruction and with the Public Service Commission took place on the basis of certain findings. The sweeping nature of the charges which started the special survey of Delaware County proved to be by no means justified; yet the Board was glad to have the opportunity to offer a more intensified Departmental service to any section of the state. Incidentally the desirability of viewing the industrial life of a county unit as a whole was illustrated.

The Board was also instrumental in making brief surveys of the labor supply available in certain sections as the demand for labor increased; and followed with interest the work of certain Chambers of Commerce in the state along the line of recruiting available labor.

One very important section of the work of the Industrial Board has from the first been the issuance of Safety Standards for the industries of the state. At the time when the country entered the war several of these Standards were under consideration and others were in contemplation. Beyond completing those which were almost finished, the Board decided to do nothing further during war pressure in the way of developing standards, except as they might be demanded by special conditions arising out of the war. As an example of these special conditions the manufacture of explosives loomed large. This was a field in which scientific knowledge and business management were in a state of flux; so that with the best will in the world Standards of exact and lasting value could not be promulgated. Six months time would probably render work in that line obsolete. It was possible however, to keep before those industries the advances in safety practice, and that was the policy pursued. In some instances strenuous objection was met on the ground that the exigencies of the war could not brook possible loss of time in attention of safety details. That opinion was met by the obvious truth that explosions such as wrecked certain plants in the state (altogether aside from the loss of life involved) were a far greater hindrance to war equipment than time taken in safety measures could ever be. In one instance the Federal government was called in to assist in demanding safer practise when the pressure of federal war contracts was urged as excuse for defying Pennsylvania safety requirements.

As to the enforcement of Safety Standards already existing, the Board adopted a policy that recognized the real difficulties of the times. Materials were hard to secure; labor was so scarce that it was exceedingly difficult to divert it from the main business of war production to the installation of safety devices and comfort requirements. Where good faith was evident in the progress of such work extension of time was granted for unavoidable delays; and the substitution of materials was in some cases permitted when prescribed materials seemed impossible to obtain. These relaxations of Standards were granted only for the war period; and the guarding of machinery and other safety work progressed to a surprising extent during those months of industrial pressure.

The increased employment of women in heavier occupations led to the attempt to formulate standards for such work. In this the Federal Women in Industry Service gave co-operation. The result did not take the form of a regular Standard, but appeared finally as a pamphlet compilation of law and suggestion as to the employment of women. A simple Standard as to Shop Clothing for Women was the outcome of the introduction of women into machine shops.

In the large labor and production issues of the time the Industrial Board manifested its interest, and endeavored to exert its influence, as they were brought to its attention. It went officially upon record as approving national prohibition of the liquor traffic, as a measure for the increase of labor efficiency, for the conservation of food supply in the war emergency, and for the liberation of means of transportation to war materials. The Board also appealed to the employing and laboring forces of the state, asking them to work in co-operation for the period of the war, exercising generosity each toward the other as they were united in a common cause. The Board was specially disturbed over reports brought to it regarding the discrimination against negro workmen as fellow laborers by members of trades unions. Investigation seemed to bear out the truth of these charges but the situation was so complex, and so submerged in the immediate necessity for huge-scale war production that it was not possible to do very much about it. The interest thus aroused did pave the way later, however, for carrying out a wish of the Governor of the State for a survey of conditions surrounding the negro population of the state.

To sum up the work of the Pennsylvania Industrial Board during the Great War period of the country it may be said that its activities were directed as follows:

1. For the maintenance of labor laws and labor standards, in the belief that this would contribute most to the efficiency of labor.

2. To secure justice for the workers in the belief that thus friction would be lessened, and the high production necessary for the war would be secured.

3. To impress upon the workers the importance of harmonious service and their great contribution to national welfare and the credit of the state.

4. To secure if possible out of the turmoil of war progressive and humane adjustments of thought and practice that might form the foundation for a future industrial relationship better than the state has yet known.

Commonwealth of Pennsylvania

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OF THE

Department of Labor and Industry

CLIFFORD B. CONNELLEY
Commissioner

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WHAT PENNSYLVANIA IS DOING FOR SAFETY AND SAFETY CODES

Part I

PENNSYLVANIA AND SAFETY PROGRESS

(a) In Relation to the National Safety Movement:

Safety work in Pennsylvania as a function of the State government has kept pace with the van of the great national movement for industrial Safety. Closely following the launching of the "Safety First" idea as a nation-wide issue the Department of Labor and Industry was created in Pennsylvania to promote the welfare of labor and the prosperity of its industries. The plan of organization, its personnel of wide-awake engineers and industrial experts, and the general favor with which the Department was received tended, from the very beginning, to put forward safety as its dominant service towards industry. Other State agencies which contribute in a definite way to the safety program of Pennsylvania are the Department of Mines and the Public Service Commission. As the accident reports of these agencies filter through the Department of Labor and Industry, it is our purpose to confine this discussion to the work of the Department of Labor and Industry.

(b) In Relation to the Evolution of Industry:

The progress of Safety in the State not only paralleled the best efforts of the National Safety Movement, but has been in keeping with the spirit of the times as affecting the evolution of industry, In the short period of less than seven years the industries of Pennsylvania, and the workers, have been made to respond to demands for production and efficiency such as were never known in the industrial history of the Commonwealth. That all demands were met, especially during the war period, is a matter of record and one need not wonder, therefore, that there is some industrial unrest in the industries of the Keystone State, as there is in every other part of the world.

FOUR STAGES OF SAFETY PROGRESS

Four stages, or periods of progress, mark the onward march of Safety in Pennsylvania. They are what may be termed:

1. *The Pioneer Safety Period*, covering the years 1913 to 1915 inclusive, during which the Department of Labor and Industry was created and a determined educational campaign was carried on in the interest of accident prevention.

2. *The Compensation Period,* covering the latter part of the year 1915 and particularly the year 1916, in which the conscience of industry was awakened by legislative enactment to the newer meaning of accident prevention, is notable for the increase in accident reports.

3. *The War Period,* covering the greater part of the years 1917 and 1918, in which Safety was stressed as an all-important war measure.

4. *The Readjustment or Reconstruction Period,* from 1919 to the present time, in which Safety is stressed as an aid to production and as a remedy for industrial unrest.

A STATISTICAL STUDY OF SAFETY PROGRESS

The accident statistics for these periods show this Safety progress in a very concrete manner. The total number of accidents reported are:

The Pioneer Safety Period.

1913	12,752
1914	38,126
1915	61,540
Total	112,418

The Compensation Period.

1916 255,616 (or over twice the total of the previous three years.)

The War Period.

1917	227,880
1918	184,844
Total	412,724

The Readjustment or Reconstruction Period.

1919	152,544

The annual increases in the first period indicate clearly that the initial steps in Safety in educating both the industries and the workers to report accidents made notable progress. The numerical crest of accidents, as could be expected, was reached in 1916, the first year of the functioning of the Workmen's Compensation Act. In 1917 there is a decrease of 27,736, accidents and in 1918 a decrease of 43,036 accidents over the 1916 report and it is likely the decrease would have been greater had not the war with its "speeding up" processes added new hazards to industry. The 1919 report shows a further decrease of 32,180 as compared with 1918 and a decrease of 103,072 as compared with high figure of 1916 and it is certain had not the reconstruction period been so disturbed by industrial disputes, profiteering and general unrest, the decrease would have been considerably greater.

The story thus told by the figures is a cause for encouragement. The dreaded and paralyzing disease which was slowly but surely, destroying our industrial efficiency and putting us out of the race for the competitive business of the world showed unmistakable symptoms of its presence by the treatments of the first period of the Safety diagnosis. The crisis was reached in 1916 and from then on, notwithstanding the disturbing influences and complexities, there has been a decided turn for the better. We expect the 1920 figures to show less accidents than 1919 and each succeeding year work toward the gradual elimination of industrial accidents.

PRESENT OBJECTIVES IN SAFETY WORK

To understand the present objectives in our Safety work, it is necessary to trace the Safety methods which have characterized the four periods. It is noteworthy that in spite of the changed conditions, almost incredible changes in so short a period of time, not a single plan or method has been put upon the scrap-heap. In other words, what Pennsylvania is doing for Safety today is but a re-quickening of the accumulated efforts of the past. It is our firm conviction that success in accident prevention cannot be attained by spasmodic campaigning, however far reaching and high sounding the programs, but by a determined continuous effort year after year. In this connection the following is quoted from The Travelers Standard, Hartford, Connecticut, by way of emphasis of present day Safety objectives:

> "In many respects safety work is similar to advertising—particularly so in the matter of repetition. One advertisement of a sensational bargain may suffice to dispose of a limited stock, but for average business conduct it is essential to keep the name of the manufacturer of the product continually before the public. In like manner it is necessary to coutinually

plan, instruct, and provide for the workmen's safety. Another respect in which advertising and safety work are much alike, is in the cumulative effect. Some experts estimate that $5,000, properly expended in advertising during a year will return $4,000 the second year, $3,000 the third year, $2,000 the fourth year and $1,000 the fifth year. We do not insist upon these precise figures. It is evident, however, that the value of an advertisement endures for a considerable time.

"Unfortunately we cannot make a similarly detailed comparison with respect to safety work. It has been amply demonstrated, however, that what we may call the "delayed returns" on well-sustained, organized safety work are materially in excess of those that follow advertising. A safety campaign conducted in a plant for one year and then discontinued will show definite results for several years in the way of fewer accidents, as compared with the accident rate prior to the campaign. The delayed returns and influence will depend largely on the nature of the campaign and the character of the employees, and upon the extent of the labor turnover. The illiterate, the carefree, and the radical workman will not respond as freely as the steady-going conservative workman. A slip-shod campaign will have little influence on a workman of any type, while a large turnover will materially reduce the effectiveness of any campaign; however well conceived and faithfully executed. These are just the intangible factors that cannot be accurately gaged and are the basic reasons for continuing the safety work. If the results of the first year's efforts justified the expense, there is every reason to continue the work, because the influence that extends from each year's work over into the succeeding years is pure profit; and the cumulative effect will continue until such time as avoidable accidents are practically eliminated.

"There will always be a need for safety work in our industries because man is prone to forget that which is good for him, and there is a certain element of chance-taking in all of us. New men coming from other mines or plants may not have had the advantages in safety education that your own employees have received, and these men must be taught. Finally, each year sees thousands of boys, just from school, entering our industries with little or no conception of the hazards and responsibilities that are involved, and with no training in safety."

A RETROSPECT OF SAFETY ACTIVITIES

To bring to focus the efforts of the past in a summarized form and to show the full scope of Pennsylvania activities for safety, we shall follow as closely as possible the four periods as outlined, pointing out in each period (a) the important Safety Legislation, (b) the Safety Standards created and (c) the Safety Publicity or campaign conducted.

The Pioneer Safety Period:

(a) Safety Legislation

Prior to 1913 there was some legislation, of course, relating to the safety of employes, but this for the most part was concentrated in the Department of Labor and Industry, created June 2, 1913,

and is therefore the fundamental step in the Safety program of the Commonwealth. The Department as originally constituted provided for an Industrial Board, a Bureau of Inspection and, as a part of the latter, the Division of Hygiene and Engineering, a Bureau of Statistics and Information and a Bureau of Mediation. By later amendments the Bureau of Statistics and Information was removed from the Department and a Workmen's Compensation Board, a Bureau of Workmen's Compensation, a Bureau of Employment and a Bureau of Rehabilitation were added. The Department organized at present is a complete Safety organization, not only as it affects the popular conception of our industrial accidents, but also in accordance with the more advanced definition of an industrial accident as "anything occurring within an industry which impairs the earning power of a worker."

It is not our purpose, however, to include unemployment and the losses due to industrial disputes within the scope of this discussion, but merely to mention in passing that both are industrial hazards of the most serious nature.

Among the other labor laws passed during the period which were largely Safety measures to be enforced by the Department are (1) employment of certain minors in quarries, (2) making and sale of mattresses, known as the Mattress Act, (3) protection of employes exposed to occupational diseases, (4) protection of employes in certain occupations by use of blowers, (5) regulating the employment of females in certain establishments and (6) reports of employers as to accidents to employes.

(b) Safety Standards:

The Inspection Bureau of the Department in its efforts to enforce the laws discovered that not much could be gained by a corps of inspectors visiting the various industries of the Commonwealth with the idea of talking Safety and recommending safeguards for dangerous machinery and conditions without fixed rules and regulations which would serve to call attention to safe practices, and to make uniform the requirements. This gave the Industrial Board the opportunity to develop one of its important functions—the creating of Safety Standards. In this particular work, as well as in all of the Safety work of the Department, the trained intelligence and the expert service of the Division of Hygiene and Engineering aided considerably.

When the Industrial Board took up Safety Standard making it was an almost unknown government function. Real pioneer work had to be done. It meant, for example, a considerable effort to survey the industry; the employe had to be shown that mechanical

safeguarding of machinery, and rules prescribing his doing the job did not interfere with his earning capacity. It was not always easy to convince the employer that Safety was an investment rather than an expense. The Safety engineer was unknown. There were practically no Safety appliances on the market. The National Safety Movement was in its infancy and few people were "sold to the idea." The State was not organized to carry out a program of Safety. In short there was very little precedent to follow, but there was considerable tradition of industrial distrust, ignorance and disinterest to hinder. The Board set out to the task, however, following the plan as outlined in detail in Part II, and succeeded in having fifteen codes adopted during this period.

(c) Safety Publicity

1. Conferences:

Two conferences were held in the interest of Safety, known as Industrial Welfare and Efficiency Conferences which brought to Harrisburg, men of the industries who were interested, as well as the Department officials, for the interchange of opinion and experiences.

2. Permanent Safety Exhibit:

This is a collection of pictures and posters, secured from industrial firms and is sent out to fairs and public gatherings throughout the State, for the purpose of serving as a clearing house for Safety devices and for the prevention of accidents and industrial diseases.

3. Publications:

The publishing of a monthly bulletin was begun in 1914, which in addition to Departmental news, featured typical accidents as picked by the inspectors, and recommended methods of prevention. Articles were also written offering suggestions for forming fire drill organizations in factories and for Safety organization in industrial establishments. First aid was urged as a part of the Safety Movement.

The Compensation Period

(a) Safety Legislation:

The outstanding legislation of this period were the Acts, four of which were passed in 1915, which established the compensation system of Pennsylvania. The primary purpose of the Workmen's Compensation Law and the correlative Act creating a State In-

surance Fund, also passed in 1915, was to prevent industrial accidents. Pertinent to the subject of Safety were, (1) establishment of a Bureau of Employment, (2) Child Labor Act, (3) an Amendment to the Woman's Law regarding female employment and (4) regulating the business of assisting employers to obtain employes and of persons to secure employment.

(b) Safety Standards and Safety Appliances:

But four Safety Standards were adopted during this period but they were of a nature that required considerable effort and much technical advice. These codes were Lighting, Elevators, Explosives and the Electric Code.

During this time, too, a new development of the Safety idea came about in the appointment of the Industrial Board of a Committee on Approvals, whose duty was to examine and test devices and appliances and recommend Safety features as applicable to the industries of the Commonwealth. Twenty-two certificates of approval were issued during 1916.

(a) Safety Publicity:

1. Conferences.

The immediate result of the operation of the Compensation Laws was the enormous toll of accidents which were reported. For the first three months of 1916 the reports showed.

	Killed	Injured	Total
January	188	13,336	13,524
February	229	24,253	24,482
March	206	26,732	26,938
Total	623	64,321	64,944

This led to the calling of an Industrial Accident Prevention Conference, which was probably the first assembly of its kind in the United States. It consisted of about 150 leaders in industries (not representatives of leaders or safety men or technicians), labor leaders and government officials. The purpose was to bring the facts to the direct attention of the employer and owner, and secure their co-operation.

Another type of conference which was inaugurated during this period was that of Industrial Physicians & Surgeons, ten of which conferences have been held to the present time. These have fur-

nished first hand information on vocational diseases, rehabilitation, etc. and have brought hundreds of medical men in direct touch with the problem of industrial Safety.

The emphasis put upon the medical phase of accident prevention led to the establishment of two vocational clinics, one in the eastern part of the State at the University of Penna. where an entire hospital was devoted to sufferers from diseases presumed to be contracted in their employment, and conditions under which they work, and the other in the western part of the State in co-operation with the United States Bureau of Health. The purpose is finally to make a study of occupational and vocational diseases.

2. Publications.

In addition to the monthly bulletin of the Department the following new publications were distributed for the use of the industries:—

Accident Prevention Posters for placing on Bulletin Boards and other conspicuous places around industrial plants.

Timely Hints, a series of small pamphlets written in popular language for the guidance of workers in safeguarding themselves.

3. Additional Safety Methods:

(a) Use of Motion Pictures as a means of Safety publicity.

(b) Organization of the Commonwealth for Safety as a model Safety organization for industrial establishments.

(c) Establishment of a "Flying Squadron" in the Bureau of Inspection, made up of selected inspectors to devote their entire time to investigating and reporting on serious industrial accidents.

War Period

(a) Safety Legislation:

The Legislature of 1917 passed several acts in the interest of Safety, the most notable of which was the creation of a Health Insurance Commission to investigate sickness and accident of employe not compensated under the Workmen's Compensation Law. Other laws applying to specific industries were: (1) an amendment to a previous act providing for the Safety in person from fire or panic in certain buildings; (2) law pertaining to the construction, operation, and inspection of moving picture booths or enclosures and (3) an act regulating the employment of persons in compressed air work.

(b) Safety Standards and Safety Appliances:

Eleven Safety Standards were created during this period, of which the codes on Nitro and Amido Compounds, and Shop Clothing for Women, are distinctly war-time codes in the sense that they were created as a result of demands of the war.

Eighty-five Safety appliances were approved during 1917 and 1918.

(c) Safety Publicity:

Throughout this period the appeal was made for Safety as a war measure. The following is an interesting list of causes for accidents during this period:—

Carelessness.
Speeding Up.
The New Man Hazard.
Unguarded Danger Points.
Failure to keep in constant Service Safeguards provided.
Lack of Americanization.

1. Conferences:

In the fall of 1917 the Fifth Annual Industrial Welfare and Efficiency Conference was held, and Women in Industry, Reconstruction, Rehabilitation of the War Injured, and Americanization, were among the leading topics discussed.

2. Publications:

A bulletin of the Department of Labor and Industry was issued in 1918 setting forth "Pennsylvania's Part in the National Plan for Rehabilitating and Placing in Industry Soldiers and Sailors Disabled in War Service." This was as a result of the realization early in the war that proper places in industry should be found for Pennsylvanians disabled in war service. Accordingly all the employers in the State were circularized and tentative employment opportunities for approximately 50,000 workers were secured.

3. Ruling of Industrial Board on Americanization.

Pointing towards Americanization, the following ruling was promulgated July 1917: "No person shall be permitted to labor in any group employment in a position of command or obedience who is unable to speak or understand the language of his or her co-laborers, whereby through misunderstanding, accident and injury are apt to result to fellow workers."

Reconstruction Period.

(a) Safety Legislation:

The important piece of legislation affecting industrial Safety, during the present time, is the establishment of the Bureau of Rehabilitation in the Department of Labor and Industry by the 1919 Legislature. As an act of social and humane legislation it ranks next to Workmen's Compensation and is related to the latter in the sense that while the main purpose of Workmen's Compensation is to prevent accident, Rehabilitation gives man another chance after he has been maimed by accident. To August 1, 1920 the new Bureau has offered its services to 798 industrial accident victims. Other laws passed apply to (1) Bakeries and Bakery Products, (2) Boilers Used in Operation of Oil Wells, (3) Sanitary Requirements in Mills and (4) Precautions Against Panic and Fire in Certain Buildings. Of special significance as a far-sighted Safety measure was the passing of the law requiring the teaching of "Safety First" in public schools.

(b) Safety Standards and Safety Appliances:

The necessity of bringing the Safety Standards up to date because of changes caused by war conditions, and new industrial experiences, is the reason for the general revision of all Safety Standards, which is now under-way. Several new codes such as the Head and Eye Protection, Sanitation, and Laundries, are being formulated also at this time.

Over fifty approvals for Safety Appliances have been granted during this period. Illustrated bulletins are being compiled setting forth these devices as safe for the industries of the Commonwealth.

A Museum of Safety Appliances has also been inaugurated which houses the devices for which certificates of approval were granted.

Safety Publicity.

1. Conferences.

No conference of a general nature was called since 1917, due to unsettled conditions. In the spring of 1920 a five day convention was held, known as the Pennsylvania Safety Congress. This was the greatest gathering of its kind and in a way epitomized the Safety efforts of the past six years. The purpose of the Congress was set forth as follows:—

"The demands of the great war upon industry and the consequent lowering of standard of industrial Safety, the period of readjustment and consequent industrial unrest make it important

that Pennsylvania rally to meet the challenge of the hour. This Congress is the forerunner of a particular program for industrial Safety that will touch every industry in the Commonwealth."

2. *Community Safety Week.*

In keeping with the avowed intent of reaching the industries of the Commonwealth, two community-wide "Safety-Week" campaigns have been held in which the Department furnished considerable help. Similar campaigns are now being arranged to cover the entire State.

3. *Newspaper Publicity.*

A continuous accident campaign is being conducted in which the newspapers of the Commonwealth co-operate by publishing the monthly accident reports with comments.

SUMMARY OF SAFETY ACTIVITIES:

By way of summary, the Safety program of Pennsylvania is based upon:

1. The enforcement of at least twenty-five specific Acts of Legislature notable among them being the Acts creating the Department of Labor and Industry, the Workmen's Compensation and Rehabilitation.

2. The placing of responsibility upon employers as well as employes of the Commonwealth, for complying with the requirements of thirty Safety Standards, and others that are being developed from time to time.

3. Serving the employes, the State officials and manufacturers of Safety devices with a means of knowing and approving appliances which are safe for the industries of the Commonwealth. The approved devices numbering 160, are classified as (a) Boiler Appliances, (b) Elevator Appliances, (c) Mechanical Appliances, Machine and Woodworking Guards, (d) Electrical Appliances, (e) Motion Picture Appliances, (f) Fire Prevention and Protection Appliances and (g) Miscellaneous Safeguards and appliances as anti-slip treads, no-slip ladder shoes, ladders, etc. These are open for public inspection in the Department Museum.

4. Educational campaigns such as the Safety Congress and Community-wide Safety Programs, motion picture entertainments,

vocational clinics and the publication of bulletins, posters and pamphlets that "all that run may read," in every industry in the Commonwealth.

5. Co-operation with the Department of Public Education in the instruction on "Safety First" in our Public Schools.

What Pennsylvania is doing for Safety Codes, in addition to the facts already stated, may be seen by tracing out in more detail the making of a Pennsylvania Safety Standard as follows in Part II.

Part II

THE MAKING OF A SAFETY STANDARD

A CO-OPERATIVE EFFORT:

The making of a Safety Standard, or a code of rules governing industrial Safety, is more than a one-man job. It represents the co-operative interest and experience of (1) the worker or wage earner, (2) the employer, (3) the engineer or technical expert, (4) the manufacturer, (5) the State, (6) the insurance carrier and (7) the public. It affects the life and health of the worker, the pocket-book of the employer, the ingenuity of the engineer, the skill of the manufacturer, the law enforcement power of the State, the field of business for the insurance carrier, and the welfare of the community. In the last analysis every interest that can contribute towards the protection of the life, health, safety and morals of the worker in industry is concerned in the making of a Safety Standard.

A PROGRESSIVE DEVELOPMENT.

There are two possible viewpoints in drafting a code of Safety rules. There is that which holds that a Safety Standard is the ultimate goal to be reached—that it is the "bar of platinum" preserved and guarded under ideal conditions, to which everything must be made to conform. The other view is that a Standard is a progressive growth, measured by the best experience and practice of our constantly developing industries. The better training of the worker, the achievements of the inventor, the keener sense of responsibility of the employer and of the State, the closer and fuller organization of the employer and of employes and better understanding between them, and the larger interest of the public, are the forward steps in the march of industry. These must be written into the code of rules, according to this view, from time to time. This is, of course, the viewpoint of the State of Pennsylvania in the Safety Standards issued by the Industrial Board. The inspector, under this view, has not the right of private interpretation, but must confine his instructions to the Standard as written.

METHOD OF PROCEDURE IN WRITING SAFETY STANDARDS, AS ILLUSTRATED BY THE ELEVATOR STANDARD NOW IN PROCESS OF REVISION.

To illustrate what is meant by making a Safety Standard it may be to the point to take a specific standard and trace its development. The Safety Standard applying to Elevators, which is now uppermost in the minds of some people, may serve our purpose. The duty of initiating the formulation of a Standard rests with the Safety Standards Committee of the Industrial Board. In the case of the Elevator Standard the task was to revise the original draft, which had been in effect for the past three years. The method of procedure in revision is not unlike writing the original draft, except that as the experience makes possible a more finished document, consistent with up-to-date industrial conditions. The first step was to secure a committee, representative of all interests in the making of an elevator, the installation of it, the owner, the user and the operator. The plan was to have as small a committee as practicable in order to facilitate the work. This committee was to discuss the Standard in effect with the view of suggesting changes where necessary. The interest was so keen that the attendance was too large to attempt the work at the first meeting. (A significant fact in this connection is that the State does not pay a single penny of the expenses of those who do this work.) By vote it was decided that the Chair appoint a sub-committee of ten and refer the re-writing of the Standard to this body, with the idea that the re-drafted document would be submitted to the larger group at a later date. The sub-committee of ten spent six full days in considering the Standard before submitting it to the General Committee.

One hundred and fifteen pages of typewritten copy were returned to the sub-committee representing the criticism of the general committee. It is now the task of the sub-committee to digest this material and incorporate it into another draft, which will be the tentative code for public hearing. The public hearings involve a campaign of publicity in newspapers, trade journals and the circularization of all persons of the State who may be affected by any provision of the Standard. The meetings will be scheduled at convenient parts of the State, probably in Philadelphia, Pittsburgh, Scranton, Erie, Harrisburg, and other places if found necessary. Stenographic record will be made of all criticism offered at each meeting and this will be made available for the sub-committee of ten, which will be called together again to make a final draft of the Standard. The final draft when completed will be submitted at a regular meeting of the Industrial Board for adoption. It is then distributed to all interested, free of charge.

SAFETY STANDARDS ADOPTED.

The following is the complete list of Safety Standards now in operation:

Volume I

Power Transmission
Standard Railings & Toe Boards
Machine Tools
Boilers
Stationary Steam Engines
Ladders

Volume II

Lighting
Elevators
Electric
Cranes
Scaffolding
Compressed Air

Volume III

Forging & Stamping
Polishing & Grinding
Wood Working
Foundries
Fire Prevention

Volume IV

Bake Shops
Canneries
Cereal Mills
Motion Pictures
Shop Clothing
Printing

Volume V

Explosives
Nitro Amido
Lead Corroding
Paint Grinding
Dry Colors
Plant Railroads

NEW CODES BEING FORMULATED.

In addition to the general revision of all codes now in operation, the Department through its regular channels is engaged in formulating the following new codes:

Head and Eye Protection.
Sanitation.
Laundries.
Housing.
Refrigeration.

PENNSYLVANIA'S ATTITUDE TOWARDS THE STANDARDIZATION OF STANDARDS:

Pennsylvania favors standardization and is represented on the National Committee by the Commissioner of Labor and Industry. It is not the purpose of the State, however, to give up the work of drafting Standards or lose its identity in the bigger movement.

The best Standards for Pennsylvania will always bear the "MADE IN PENNSYLVANIA" stamp. There is ever the danger in pooling interests of losing what might be termed the "personal touch." A national body is sure to become a group of experts, in which the technical side will be emphasized, not intentionally, of course, at the expense of the human interest. Somebody has said that Standards to be of the maximum value must be 15% technical and 85% human. The technical or legal must never replace the commonsense viewpoint—this is one of the best features of the Pennsylvania Standards.

By this we do not mean that Standard making must not rise above the "rule of thumb" method. The technical spirit and the legal thought must be incorporated, but only in as far as the industry in which the Standard is to apply is educated to the Safety idea. Nothing weakens law or rulings quite so much as making enforcement or compliance unduly difficult. Provision should be made, therefore, to have the Standards as simple as possible and by constant checking and rechecking, adding and detracting, keep them within the range of those for whom they were intended. It should not be necessary to employ a lawyer to interpret a Safety Standard, nor should the specifications be such that only an engineer can understand them.

Commonwealth of Pennsylvania

THE BULLETIN

OF THE

Department of Labor and Industry

CLIFFORD B. CONNELLEY
Commissioner

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DEPARTMENT OF LABOR AND INDUSTRY

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W. A. Riddle, Chief Clerk.
A. O. Vorse, Editor.

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LETTER OF TRANSMITTAL.

September 23, 1920.

Hon. Clifford B. Connelley,
Commissioner, Labor and Industry,
Harrisburg, Pa.

My dear Commissioner:

I herewith transmit the annual report for the Bureau of Inspection covering the year 1919.

Very truly yours,

JOHN H. WALKER,
Chief, Bureau of Inspection.

ANNUAL REPORT

BUREAU OF INSPECTION

1919

Following the ending of the war, it was apparent that the Bureau of Inspection had a task of great magnitude before it in assisting the industries of Pennsylvania to return to normal pre-war conditions. In the previous year, every energy in Pennsylvania's industries had been directed toward producing munitions and supplies, which were so greately needed. The inspection force had outlined its work with a view to helping the industries carry on, and at the same time increase the man-power of the country by reducing, as far as possible, industrial casualties.

Following the cessation of hostilities, there was a great let-down in industry, and the Bureau of Inspection realized that its work could not immediately drop back to pre-war standard. This necessitated an entire readjustment of the work of the Bureau, and it was found to be more difficult to have instructions complied with and to come back to the former close observance of the laws governing the employment of women and children. In addition to this, our inspectors were called upon to assist other Bureaus who were more directly affected by the unrest resulting from the changed conditions, and we found that more time was put in by our inspectors in mediation and arbitration work than in any previous year.

The records show 68,055 inspections and 21,654 visits made during the year; also that 1,583 violations of laws were reported. Of this total number of violations, 473 were violations of the Woman's Law and 1,022 were violations of the Child Labor Law. The large number of violations of these two laws is directly traceable to war conditions, for never in the history of Pennsylvania were so many women and children employed as during 1918 and the early months of 1919.

It was found that 7,690 orders were issued by inspectors during the year and that 8,085 orders were complied with during the same period. This figure includes cancellations, as well as actual compliances. The larger number of compliances and cancellations is due, undoubtedly, to the fact that in the fall of the year we instituted a drive for the purpose of clearing up orders of long standing and

closing our files. This process always results in a large number of cancellations, as orders that are several years old will be cancelled and new ones issued.

We have appended, hereto, tables showing in more detail the inspection work; also, we append detailed reports of each Division of the Bureau. It will be observed that there are thirteen inspectors carried under the head of "special," and it should be remembered that of these only two are regularly engaged in field work. The others are required for office work and the supervision of divisions, only occasionally doing field work in special cases. Also, of the twenty-six charged to Philadelphia, three are required in the office; and of Pittsburgh's twenty-three, one is exclusively used in the office and the greater part of one other's time is also so employed. This reduces our actual field force to only about eighty per cent. of its authorized strength, and is a result of failure to legislate sufficient clerical assistance. In the table by industries, the figures given cover only such establishments as were visited, and must not be taken as covering the entire State.

A great part of the year 1919 was used in re-organization work and, undoubtedly, the results of this period will begin to show in 1920. Conditions are becoming normal and the work of the Bureau is reverting to the pre-war basis. There have been numerous changes in the personnel of the Bureau, and this turn-over affects inspection work in about the same ratio as it affects industry.

The attention of the reader is called to the report of the accident division, and particularly to the decrease in industrial accidents which amounted to thirty-five per cent. This decrease is especially gratifying, although it must be taken into consideration that the industries were not working as full time in 1919 as they were in 1918. We have not been able thus far to obtain for this division the equipment and personnel necessary to carry out the work of accident prevention as we should like to do it. This is principally due to lack of legislation which will enable us to provide a suitable force to carry out this work, and it is to be hoped that in the next legislative session adequate provision will be made for the carrying out of the work of this division in a more efficient manner, as well as the work of the other divisions of this Bureau, and until we can secure from the legislature the necessary personnel and appropriations we will not be able to obtain the fullest possible results from our work.

Respectfully submitted,

JOHN H. WALKER,
Chief, Bureau of Inspection.

TABLE SHOWING INSPECTIONS BY DISTRICT—Year 1919.

District.	Number of inspectors.	Number of inspections.	Number of visits	Orders issued.	Orders completed.
Philadelphia,	26	27,554	4,193	2,468	2,476
Pittsburgh,	23	11,860	6,936	1,346	1,494
Scranton,	15	9,455	5,581	1,598	1,709
Lancaster,	12	6,613	1,570	694	874
Williamsport,	6	2,912	1,253	361	358
Erie,	6	6,707	891	1,156	1,134
Special,	13	2,954	1,230	67	40
Totals,	101	68,055	21,654	7,790	8,085

TABLE OF INSPECTIONS BY INDUSTRY—YEAR 1919.

Industry.	Inspections.	Visits.	*Employes.				Safety organizations.	Passenger elevators.	Freight elevators.	Boilers.
			Female 14-16.	Female over 16.	Male 14-16.	Male over 16.				
Building and contracting,	687	680	59	1,037	57	29,984	13	7	43	117
Chemicals and allied products,	1,526	253	143	4,568	177	28,138	122	46	554	1,137
Clay, glass and stone,	1,292	323	172	4,353	686	43,496	184	13	389	1,099
Clothing manufacture,	5,232	540	2,890	51,473	1,177	25,439	111	678	1,668	490
Food and kindred products,	8,669	1,357	745	18,306	630	40,926	306	113	1,435	2,761
Leather and rubber goods,	1,098	160	360	7,371	493	21,168	77	63	499	435
Liquors and beverages,	512	130	78	373	17	5,251	28	6	217	359
Lumber and remanufacture,	2,717	482	133	3,634	370	35,425	227	40	744	884
Paper and printing industry,	2,867	616	311	13,893	706	28,640	102	346	1,083	1,217
Textiles,	3,131	777	4,070	51,053	1,932	38,915	233	86	839	948
Laundries,	769	152	119	6,635	37	2,825	36	17	138	422
Metals and metal products,	9,744	2,952	440	29,064	1,247	419,883	1,399	298	2,718	7,327
Mines and quarries,	188	306	5	268	23	6,466	45	1	7	192
Public service,	1,462	698	178	7,426	158	40,478	223	15	119	959
Tobacco and its products,	966	212	385	21,207	48	9,068	35	29	458	303
Unclassified industries,	3,803	1,249	430	7,980	411	20,412	52	97	489	494
Mercantiles,	14,734	2,259	1,004	45,755	1,852	42,853	233	589	1,725	4,257
Apartment and boarding houses,	1,019	549	63	599	2	525	6	14	32	72
Churches,	28	29	----------	10	----------	38	1	----------	2	3
Hospitals,	370	107	47	2,295	5	1,725	15	85	74	248
Hotels and restaurants,	2,757	692	77	10,189	39	9,509	31	159	132	583
Public halls—Lodge halls,	405	194	18	219	----------	307	1	10	8	22
Schools and colleges,	813	294	31	4,597	23	1,431	8	15	22	328
Office buildings,	266	246	51	425	23	957	4	98	16	20
Theatres—Motion picture theatres,	1,416	815	87	1,280	25	2,684	1	11	1	4
Municipal offices—Dept.,	149	5,472	41	70	----------	509	----------	35	29	6
Buildings other than above,	842	110	349	1,173	35	1,024	16	30	83	253
Totals,	68,055	21,654	12,286	301,253	10,173	1,181,788	3,508	2,901	13,524	24,940

*Number of employes shown covers only those in establishments inspected during year.

REPORT OF
DIVISION OF ACCIDENTS
1919

Reports of 2,869 fatal accidents were received by the Division of Accidents during the year 1919. As compared with the number received in 1918 (3403) a marked decrease is noticed. This twenty-four and one-half per cent. reduction may be credited to two principal causes: the lessening of industrial activities; and the effect of the industrial educational campaign carried on by the Department of Labor and Industry. Another appreciable reduction in the toll of fatalities is due to the low number of explosions and minor catastrophies. Only eight reports of accidents resulting in the death of five or more persons were received:

Date of Accident	Company	Cause	Number Killed
1- 6-19	Film Exchange Bldg., Pittsburgh	Explosion,	9
3- 6-19	Penna. R. R. Co., Montgomery Co.	Wreck,	5
5-10-19	Haws Refractories Co., Mifflin Co.	Drowning,	7
5-16-19	Merchants Shipbuilding Corp., Bucks Co.	Drowning,	6
6- 5-19	Hudson Coal Co., Lackawanna County	Explosion,	95
7-12-19	Philadelphia Bureau of Fire	Fire,	5
7- 8-19	Lehigh Coal and Nav. Co., Carbon Co.	Explosion,	6
10-10-19	John Baizley Iron Works, Phila.	Explosion,	8

The following tabulations show fatal accidents classified as Industrial, Public Service, and Mines. Nine hundred seventy-four Industrial Accidents were reported in 1919, as against 1,507 in 1918, a decrease of twenty-six per cent., and the Mines ten and one-half per cent.

In forty-nine of the sixty-seven counties of the State the fatality rate has fallen. Fulton, Montour, Pike, Snyder and Union Counties had no accidents for 1919. In 1918 Union reported three and Pike two. Forty-two counties show a decrease in the number of industrial accidents. But few accidents other than those under the industrial class come within the scope of the Department insofar as investigation is concerned. These exceptions include accidents occurring in certain departments (Maintenance of Equipment) of Public Service Corporations that are subject to factory inspection.

Reports of 979 accidents were investigated by our accident investigators. In an analysis of these investigations seventy-two per cent. of them were preventable, which substantiates the figures of

safety experts that from sixty-five to seventy-five per cent. of industrial accidents can be prevented. Recommendations made by our investigators to prevent possible recurrence of similar accidents have been in most part carried out. Letters from employers give evidence of full co-operation in the effort to eliminate the accident hazard.

No little credit can be given to the work of safety organizations which have imbibed the spirit of safety and are working for the welfare of their fellowmen. There is no doubt, whatever, that a large field is open for safety organizations among the smaller industries of the State. Accidents occurring in plants are usually attributed to lack of industrial education. I wish at this time to commend the work of our accident investigators who have in many instances subjected themselves to danger while in the performance of their duties.

Six thousand five hundred and eighty non-fatal accidents were investigated by the regular inspection force along with their usual duties. The reports received from the supervising offices are as follows:

DISTRICT.	MINOR	SERIOUS
Philadelphia,	2,041	113
Pittsburgh,	2,079	111
Scranton,	516	28
Lancaster,	183	63
Erie,	1,221	24
Williamsport,	175	26

The safety campaign work carried on throughout the State by means of lectures and motion pictures, has proved that this method of industrial education is effective. Meetings held during the year with the number of persons present were as follows:

1-17-19	Hahnemann Medical Hospital, Phila.,	300
1-22-19	Aviation Camp, Y. M. C. A., Middletown,	175
3-14-19	Physician's Conference, Pittsburgh,	300
3-26-19	Renovo Theatre, Renovo, for employes,	750
3-28-19	Liverpool Theatre, Liverpool,	300
4- 1-19	Bijou Theatre, Milton,	650
4- 3-19	Lyceum Theatre, Williamsport,	1,200
4- 9-19	Wellsboro,	1,200
4-14-19	Galeton Theatre, Galeton,	900
4-22 to 24	J. G. Brill Car Works, Phila. 4 Meetings,	4,500
5- 1-19	Scenic Theatre, Bellefonte,	400
5- 9-19	Penna. Coal & Coke Co., Ehrenfield,	450
5-19-19	New York and Pennsylvania Co., Lock Haven,	450
5-20-19	Coudersport,	400
6- 6-19	Williamsport, for public schools,	800
6-20-19	Lycoming Rubber Co., Williamsport,	450
6-19-19	Dayton Shoe Co., Sonora Phonograph Co.,	200
7- 8-19	Johnsonburg Opera House, Johnsonburg,	1,025
7- 9-19	DuBois Opera House, DuBois,	800
7-10-19	Ridgway,	734
7-24-19	Temple Theatre, St. Marys,	700
8-19-19	Sprout-Waldron Co., Muney Mfg. Co., Robinson Mfg. Co., Muncy Woolen Mills, Muncy,	640
8-21-19	Avenue Theatre, DuBois,	500
8-22-19	Millerstown,	300
9-10-19	Hershey Chocolate Co., Hershey,	1,200
9-14-19	Eastern Steel Co., Pottsville,	300

9-17-19	Lyceum Theatre, Montgomery,	430
9-23-19	Penn-Harris, State Medical Society,	200
9-30-19	Atlantic City, Reconstruction Meeting,	450
10- 2-19	Williamsport, P. R. R. Y. M. C. A.,	450
10- 3-19	Williamsport Planing Mill Co.,	250
12- 8-19	Middletown Car Works, afternoon and evening,	850
12-17-19	Williamsport, Y. M. C. A. Building,	150

TABLE SHOWING THE NUMBER OF FATAL ACCIDENTS, BY COUNTIES, FOR THE YEARS 1918 AND 1919.

County.	1918.				1919.				Decrease—Percent.
	Industrial.	Public service.	Mines.	Total.	Industrial.	Public service.	Mines.	Total.	
Adams,	1	------	------	1	1	------	------	1	00
Allegheny,	439	110	69	618	246	73	45	364	11
Armstrong,	8	9	28	45	5	2	15	22	51
Beaver,	25	15	6	46	11	5	------	16	65
Bedford,	5	4	5	14	2	1	1	4	71
Berks,	17	15	------	32	20	12	------	32	00
Blair,	14	23	------	37	10	26	1	37	00
Bradford,	3	3	------	6	3	4	------	7	16 (Increase)
Bucks,	19	16	------	35	5	11	------	16	54
Butler,	8	1	1	10	7	3	3	13	30 (Increase)
Cambria,	45	32	47	124	29	18	50	97	21
Cameron,	5	3	1	9	2	1	------	3	74
Carbon,	6	7	22	35	1	2	25	28	20
Centre,	6	3	5	14	2	------	2	4	71
Chester,	15	12	------	27	28	11	------	39	44 (Increase)
Clarion,	4	5	3	12	1	4	3	8	33
Clearfield,	7	3	26	36	4	6	15	25	30
Clinton,	2	9	2	13	3	2	1	6	53
Columbia,	6	------	7	13	3	4	7	14	07½ (Increase)
Crawford,	5	6	------	11	2	3	------	5	44
Cumberland,	5	5	------	10	2	5	------	7	30
Dauphin,	46	22	6	74	25	9	7	41	44
Delaware,	120	10	------	130	75	7	------	82	36
Elk,	7	4	3	14	9	1	1	11	21
Erie,	30	7	------	37	12	9	------	21	46
Fayette,	24	23	101	148	11	8	101	120	19
Forest,	2	2	------	4	------	1	------	1	75
Franklin,	3	2	------	5	5	2	------	7	40 (Increase)
Fulton,	------	------	------	------	------	------	------	------	--
Greene,	------	1	8	9	3	1	4	8	11
Huntingdon,	4	3	2	9	3	10	5	18	100 (Increaese)
Indiana,	4	4	44	52	3	4	29	36	30
Jefferson,	2	3	28	33	4	2	4	10	69
Juniata,	------	2	------	2	------	7	------	7	250 (Increase)
Lackawanna,	11	17	141	169	7	29	128	164	02
Lancaster,	9	4	------	13	10	8	------	18	37 (Increase)
Lebanon,	10	4	------	14	8	3	------	11	21
Lehigh,	22	11	------	33	14	9	------	23	33
Lawrence,	15	4	------	19	17	3	------	20	05 (Increase)
Luzerne,	25	9	265	299	8	22	286	316	05½ (Increase)
Lycoming,	10	11	------	21	10	1	1	12	37
McKean,	4	------	------	4	8	3	------	11	175 (Increase)
Mercer,	27	7	5	39	16	3	------	19	51
Mifflin,	11	5	------	16	14	3	------	17	06 (Increase)
Monroe,	1	------	------	1	2	4	------	6	500 (Increase)
Montgomery,	40	10	------	50	16	18	------	34	32

TABLE OF ACCIDENTS, BY COUNTIES, FOR THE YEARS 1918 AND 1919
—Concluded.

County.	1918.				1919.				Decrease—Percent.	
	Industrial.	Public service.	Mines.	Total.	Industrial.	Public service.	Mines.	Total.		
Montour,	------	------	------	------	------	------	------	------	--	
Northampton,	66	11	------	77	50	9	------	59	23	
Northumberland,	4	19	54	77	4	3	55	62	19	
Perry,	------	10	------	10	1	4	------	5	50	
Philadelphia,	250	92	------	342	187	58	------	245	23	
Pike,	------	2	------	2	------	------	------	------	100	
Potter,	2	------	------	2	2	------	------	2	00	
Schuylkill,	18	17	132	167	4	11	131	146	12	
Snyder,	------	------	------	------	------	------	------	------	--	
Somerset,	3	6	32	41	3	5	43	51	24	(Increase)
Sullivan,	1	1	------	2	------	1	3	4	100	(Increase)
Susquehanna,	3	2	3	8	------	3	5	8	00	
Tioga,	5	------	1	6	2	1	2	5	16	
Union,	2	1	------	3	------	------	------	------	100	
Venango,	10	4	------	14	8	3	------	11	21	
Warren,	6	4	------	10	5	1	------	6	40	
Washington,	16	11	108	135	14	8	46	68	49	
Wayne,	------	2	1	3	1	------	1	2	33	
Westmoreland,	35	34	75	144	17	23	81	121	16	
Wyoming,	2	------	2	2	------	1	------	1	50	
York,	12	3	------	15	9	3	------	12	20	
Total,	1,507	665	1,231	3,403	974	494	1,101	2,569	24½	
Percent decrease.	------	------	------	------	35	26	10½	24½		

REPORT OF
BOILER DIVISION
1919

The State of Pennsylvania has been operating under the A. S. M. E. Boiler Code for the last four years with entire satisfaction to this Department from an administrative standpoint, and with equal satisfaction to both boiler manufacturers and users. It became apparent to various engineers, that with the various States and cities adopting boiler rules, no two of which were alike, we were approaching a situation of great complexity and that efforts should be made to standardize the construction of pressure vessels.

The American Society of Mechanical Engineers appointed a committee of competent engineers to draw up practical rules that would assure safe boilers. Pennsylvania in the interest of safety, economy and uniformity adopted the A. S. M. E. Code which went into effect July 1, 1916 without a single modification, and with the cooperation of the boiler manufacturers and inspectors has proved to be one of the best safe-guards possible.

The A. S. M. E. Boiler Code is the last word in steam boiler construction and is in force in every State and municipality where progressive policies are the order of the day.

It will be noticed that the number of boilers suspended and condemned have shown gratifying decreases as the result of supervising inspection and the application of a first-class boiler code. It is also apparent that the system of commissioning inspectors of boilers is bearing the fruit of increased efficiency, and better inspection, with a resultant decrease in boiler accidents. In fact, the general condition observed in the accompanying summaries indicates a vast improvement, the percentage of improvement being raised by the greater number of boilers inspected.

The letter printed as a part of this report covers a partial review of conditions in State-aided institutions, where this Bureau makes the inspections. It is added with the thought that there may be points of interest contained for those concerned in matters of boiler efficiency.

Appended you will find a condensed report of the Boiler Division for the year 1919.

1919.

Total Boiler Inspections,	41,828
Ordinary Defects,	17,098
Dangerous Defects,	1,606
Boilers Suspended,	82
Boilers Condemned,	12

Following is a report of inspections made in thirty-eight institutions located east of Altoona, covering a period of practically three years. In these thirty-eight institutions we have 165 boilers, 131 of which are high pressure and thirty-four are low pressure. Forty-one of these boilers are located in State hospitals for sick and injured persons; forty-one in normal, trade and industrial schools, and the rest are located in insane hospitals. The high pressure boilers are used for generating electricity, running ice plants, laundries, etc.; the low pressure for heating purposes.

The object of these inspections is primarily for the protection of life and property—today it is a disgrace to injure a person because of faulty machinery or lack of proper safe-guards—and to acquaint the boiler inspectors of the Department of Labor and Industry with conditions existing in these institutions, so as to place them in a position to shoulder the entire responsibility of this work which will be assumed in December, 1920, according to Act No. 227, 1915.

This Act provides for a fund for the purpose of rebuilding, restoring and replacing buildings, structures, equipment or other property of the Commonwealth of Pennsylvania damaged or destroyed by fire or other casualty, and regulating the placing of insurance thereon, and providing penalties for any violation of the provisions of this Act.

This work of boiler inspection was begun in the fall of 1916. Boiler conditions in some of our institutions were very bad, and the attitude taken by the authorities of these institutions was to assume that our inspections were simply an additional responsibility to their already over-taxed shoulders and were inclined to pay no attention to any of the recommendations which were made. After several visits, however, it was possible by safety talks, and advising what was being done in the industrial centers toward safety, to interest the engineers in safe and economic practice to such a marked degree that the managements became interested. That situation prevailed especially during the year just passed, for every plant operator has had his energies directed in this direction on account of the war. He has been advised, also, as to the best ways of using coal economically, not only have they been advised but they can look back on this experience with satisfaction, knowing that coal has actually been saved and in the aggregate, the savings were large.

However, we are now confronted with a new condition, for whereas the need of coal saving as an aid to victory in the war has passed, there still remains a strong and sufficient incentive for continuing the efforts toward even greater coal economy, as a matter of good business efficiency.

We do not believe that the institutions will want to slide back to the old wasteful way of power production. The work so well started by the Boiler Division must be continued and it is our endeavor to be of the maximum service to help in this work.

The period covered by this report represents what is admitted to have been the most difficult in the history of the institutions to maintain proper boiler efficiency. This was also due to the war conditions, the scarcity of experienced labor, scarcity of coal, and inability to get proper materials such as tubes, piping, valves, etc. These conditions made our work exceedingly difficult. Shortage of help and materials made it necessary in every case to exercise the utmost good judgment and discretion in our work in order to avoid accidents or cause additional congestion, which an inflexible enforcement of the boiler inspection laws would have done.

There is, however, a great amount of work yet to be done to bring all of these institutions up to the maximum of efficiency. Following is a list of power plant in these institutions as they should be rated:

VERY GOOD.	GOOD.	FAIR.
Insane Hos., Rittersville.	Normal School, West Chester.	Insane Hos., Harrisburg.
Insane Hos., Fairview,	Soldiers Orphans. Scotland.	Insane Hos., Scranton.
Insane Hos., Hamburg.	Penitentiary, Philadelphia.	Insane Hos., Norristown.
Stevens Trade School, Lancaster.	Epileptic Hos., Pennhurst.	Normal Sch'l, Lock Haven.
	Hospital. Shamokin.	Normal School, Hospital, Philipsburg.
	Insane Hos., Wernersville.	Oral School. Scranton.
	Indust. Sch'l, Huntingdon.	Normal School, Shippensburg.
	Hospital, Mt. Alto.	Normal School, Stroudsburg.
	Hospital, Nanticoke.	Hospital, Blossburg.
	Indust. Sch'l, Glen Mills.	Normal Sch'l, Millersville.
	Hospital, Hazleton.	Hospital. Coal Dale.
	Deaf & Dumb School, Mt. Airy.	Normal Sch'l, Bloomsburg.
		Institution for Blind, Overbrook.
		State Normal School, Kutztown.
		Training in Speech, Phila.

POOR.

Hospital. Ashland.
Normal School, Mansfield.

The table below shows the number of boilers inspected in thirty-eight institutions, the number found defective and the number recommended to be replaced or reduced to 50 lbs. pressure in 1921:

	1919
No. of boilers inspected,	116
No. found defective,	8
No. ordered to be replaced,	3
No. of accidents,	2
No of persons killed,	..

REPORT OF THE DIVISION OF BUILDING INSPECTION YEAR 1919.

A review of the year's labor in this Division shows that building operations in all parts of the State of Pennsylvania are rapidly becoming normal. Immediately following the cessation of hostilities in foreign countries there came a lull in business activities in the United States; the shops and factories began operating on short periods of time and for a little while it appeared as though the country would suffer a general depression harmful to its future, both in the home markets and the export trade. This condition can be attributed to the uncertainty of the future peace relations between the warring countries, the cancelling and completion of war contracts, the readjustment of factory and shop conditions due to the change from the manufacture of war necessities to the manufacture of staple commodities.

Soon, however, a change was noticed and in a short time the shops, mills, factories and other industries began operating on full time at a very great increase in wages over the wages paid before the war period. A comparative summary here submitted shows that building operations are more extensive than they were for several years preceding the beginning of the war.

Under the head of this Division is included the items of building construction, fire protection, and the examination and approval of plans. The Fire and Panic Act, No. 357, of July 18, 1917, together with the amendment Act, No. 202, of June 7, 1919, while not immediately regulating the construction of buildings in Pennsylvania as it would be regulated if the State of Pennsylvania had a State building code. provides, in addition to the requirement for means of egress; for certain fire proof construction in stairs and stair towers; and for the installation of certain fire walls in buildings already erected or which may hereafter be erected as is necessary; for the reasonable safe protection of the inmates of buildings covered by the Fire and Panic Act; all subject, however, to the judgment of the Commissioner of Labor and Industry.

Upon the examination of plans submitted, either personally or by mail to the Department, consideration of this subject is given and recommendations made according to the best judgment of the engineers of the Division, and the summary for the year 1919, attached to this report, will show a total of 874 sets of plans approved from a total of 1,651 sets of plans acted upon. There were actually 1,020 sets of plans considered, but on account of deficiencies 631 sets of this number were necessarily returned for correction and revision. By deduction we find that 146 sets of plans did not receive the Department's approval.

In a majority of the cases intended alterations and proposed new buldings were finally abandoned owing to various reasons; such as excessive cost, etc. A number of them, however, are still under consideration and may later be presented for approval. An additional summary attached to this report also shows how the work has varied from month to month.

A volume of correspondence naturally is necessary to fully cover consideration of plans submitted. especially where architects, contractors and builders are not fully conversant with the Department requirements. In addition, there has been a considerable amount of time spent in discussion of plans and interviews with architects, contractors and builders at the Department offices. This latter method of treating plans is much more satisfactory than by correspondence. The engineers of the Division are better able to explain personally than by correspondence the application of the law and the best method of preparing plans in order that building operations may be in conformity with the State requirements.

INSPECTION OF STATE INSTITUTIONS.

The inspection of State institutions in Pennsylvania is assigned to special inspectors who have had special training for this character of work, and the regular inspectors of the Department have been instructed not to enter any institution of this kind for the purpose of inspection. Inspection west of Altoona of such institutions is conducted by Mr. James Barry of the Pittsburgh District, and those east of Altoona by Mr. Frank L. Diehm of the Lancaster District. There are in the western district sixteen institutions of this classification, and in the eastern section thirty-nine. They comprise asylums. hospitals, educational institutions and penitentiaries. Naturally the inspector finds conditions covering the means of egress which must be treated by the Division of Building Inspection. There has been no special classification of the buildings treated under this head. They are all included in the general summary.

CODES.

The following codes issued by the Industrial Board have bearing upon the work of this Division and govern action upon building plans submitted, namely: Polishing and Grinding, No. 6; Bakeshop, No. 9; Fire Prevention, No. 10; Foundry, No. 13; Lighting, No. 16; Electric, No. 21; Motion Picture Machine Operation, No. 27. The Polishing and Grinding Code requires that plans for exhaust systems to be provided for dust creating machinery must be submitted and approved. The bakeshop code provides that plans must also be submitted to show compliance with the Bakeshop Act No. 825 of 1919.

Such plans must show arrangement of ovens, sanitary conditions, heating, lighting and ventilation. The fire Prevention code is simply a no-smoking regulation for factories and is covered by field inspection. The foundry code requires plans to be submitted only for wash and toilet rooms. The lighting and electric codes apply to factories and moving picture theatres, theatres, etc., and the electric code has a great bearing upon the consideration of theatre, moving picture theatre, and amusement hall plans because the Booth Act No. 96, of 1917, provides for certain electrical requirements covered in detail by the Act and such details must be shown on the plans presented. The lighting code is more general in its application, and has no direct application to plans excepting that consideration of the subject is given when the plans are presented and if the lighting conditions are not satisfactory the owners are advised to follow certain recommendations. The motion picture machine operation code has its application to plans as explained under the electric code.

PLANS.

	1919
Total Number of Plans Received,	1,651
Total Number of Plans Approved,	874
Fire-escape Plans Approved,	296
Theatre Plans Approved,	170
Miscellaneous Plans Approved,	408

SUMMARY—1919.

PLANS RECEIVED.

New Plans Received,	1,020
Revised Plans Received,	631
Total,	1,651

PLANS APPROVED.

Theatre, Motion Picture Theatre, Opera House and Amusement Halls,	170
Miscellaneous,	269
Bakeshop,	100
Wash and Toilet Room Buildings,	18
Exhaust Systems,	21
Fire-escapes,	296
Total,	874

CORRESPONDENCE.

Letters Sent,	6,835
Long Distance Phone Talks,	101
Interviews and Discussion of Plans at Department,	391
Fire-escapes Ordered by Inspectors,	251

MONTHLY SUMMARY—1919.

PLANS RECEIVED.

	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Totals.
New plans,	52	37	83	75	92	85	118	126	93	108	69	82	1,020
Revised plans,	33	42	59	49	50	66	67	53	49	55	41	67	631
Total,	85	79	142	124	142	151	185	179	142	163	110	149	1,651

PLANS APPROVED.

Theatres, etc.,	4	8	17	9	9	19	27	22	14	17	12	12	170
Miscellaneous buildings,	8	8	16	18	27	18	19	39	38	26	21	31	269
Bakeshops,	7	2	8	7	4	9	12	11	12	14	6	8	100
Wash and toilet rooms,	2	0	0	1	2	3	4	1	1	1	1	2	18
Exhaust systems,	2	1	2	2	1	1	1	1	4	5	0	1	21
Fire-escapes,	22	25	27	21	26	30	35	35	17	20	19	19	296
Total,	45	44	70	58	69	80	98	109	86	83	59	73	874

REPORT OF THE DIVISION OF ELEVATOR INSPECTION FOR THE YEAR, 1919.

During the year 1919, 8,642 elevator inspection reports were received and checked. These reports represented the activities of the approved elevator inspectors employed by insurance and casualty companies, also of the elevator inspectors employed by the Department of Labor and Industry. An examination of these reports has revealed the following defects which were considered to be of importance:

Ordinary defective cables,	1,058
Ordinary defective car safeties,	34
Ordinary defective operating valves,	9
Ordinary defective brakes,	54
Ordinary defective controllers,	10
Ordinary defective pumps,	18
Ordinary defective wiring,	6
Ordinary defective overhead supports,	44
Ordinary defective drums,	27
Ordinary defective sheaves,	33
Ordinary defective speed governors,	30
Ordinary defective pressure tanks,	11
Ordinary unclassified defects,	10,052
Total	11,386
Dangerous defective cables,	409
Dangerous defective car safeties;	112
Dangerous defective operating valves,	5
Dangerous defective brakes,	40
Dangerous defective controllers,	5
Dangerous defective hydraulic pumps,	1
Dangerous defective wiring,	2
Dangerous defective overhead supports,	7
Dangerous defective drums,	12
Dangerous defective sheaves,	9
Dangerous defective governors,	16
Dangerous defective pressure tanks,	1
Dangerous unclassified defects,	497
Total	1,126

Two thousand six hundred and fifty-nine inspections and 651 visits were made by the Departmental Elevator Inspectors.

Five hundred and eighteen sets of plans and specifications, covering the installation of new elevators, extensive repairs, and new additions were received and checked. Of this number, 382 sets of plans and specifications were approved, and 186 sets of plans and specifications were either rejected or returned to the elevator manufacturers or elevator owners for correction.

A large volume of correspondence, incident to the checking and correction of plans and specifications, was handled in addition to the correspondence relating to the routine work of the Division.

During the month of December, the compilation of regulations, covering the construction and installation of man-lifts or man-hoists, such as are commonly used in connection with the malting and milling industries, were finished. During this month the revision of the elevator code was commenced.

The volume of work in general as handled by the Division of Elevator Inspection indicates the necessity for the appointment of a permanent assistant Supervisor of the Division. There is an urgent need for three of four additional inspectors, qualified to carry on the work of completing the census of elevators in other counties.

There is also an urgent need for additional elevator inspectors in order that the work of inspecting elevators outside of the cities of the first and second class may be conducted systematically. The furnishing of a census of all elevators is an important step toward the attainment of efficiency in the conducting of the work of the Elevator Division, inasmuch as this information will give data covering all elevators, and will show whether such elevators are insured, and are being regularly inspected by approved inspectors, or whether they are being inspected periodically.

If the Elevator Division had at its disposal an alphabetically indexed list of all elevators in the State of Pennsylvania by counties (excluding the cities of the first and second class) together with a sufficient number of elevator inspectors, it would be a real asset to the Department of Labor and Industry.

At the present time, with our limited force of elevator inspectors, and otherwise limited facilities, it is possible to inspect existing installations only at irregular intervals.

The following is a brief outline of the work performed by this Division:

Plans and specifications covering the construction and erection of new elevators, and extensive changes to existing installations, are received and checked by the Division of Elevator Inspection. This includes such electrical, hydraulic or hydro-steam apparatus as may be used, and applies to all elevators erected or repaired in the Commonwealth of Pennsylvania, excluding the cities of Philadelphia, Pittsburgh and Scranton.

Construction or repair permits are issued providing the plans and specifications as submitted are found to comply with code requirements. The disapproved plans are placed in abeyance, pending the result of further correspondence with the owners or manufacturers.

All new elevators erected, and extensive repair jobs, are inspected upon completion by our elevator inspectors.

Plans and specifications covering the construction and erection of cranes, are submitted to the Elevator Division for approval.

Copies of the reports of the approved elevator inspectors, in the service of the insurance companies, are received and checked. All hazardous conditions as set forth in these reports are investigated by elevator inspectors of the Department of Labor and Industry.

In all instances where the inspectors of the various casualty or insurance companies have issued recommendations for the rectification of dangerous conditions and where such recommendations do not receive the attention of the owner of the elevator or elevators under consideration, steps are taken by the Division of Elevator Inspection to remedy conditions. Such action is taken only after we are advised by the Insurance Companies that they are unable to obtain compliance with recommendations of their inspectors. In cases where hazardous conditions are indicated on the reports of the approved inspectors, immediate action is taken to have them rectified by the Elevator Inspectors of the Department of Labor and Industry.

The reports of the elevator inspectors of the Department of Labor and Industry and commissioned casualty inspectors, are received and checked. A monthly classified list is made of the defects appearing on all elevator inspection reports examined.

All correspondence pertaining to the correction of plans, interpretations of the elevator and crane codes, and the regular routine of inspection work, is handled by the Division of Elevator Inspection.

The State at present is divided into three elevator inspection districts. Two elevator inspectors are located in the city of Pittsburgh, one in Altoona and one in Lancaster. These inspectors, in addition to checking new construction, are covering all elevators located in their individual districts as rapidly as possible. This is in addition to such special trips as are necessary from time to time.

The Supervisor, in addition to handling the routine work of the Elevator Division with regard to plans, correspondence, etc., makes from time to time special trips when required to dispose of special cases. Since the first of January, 1919, an instruction book was prepared covering the inspection of cranes for the guidance of the field inspectors. Regulations were also drafted governing the employment of females as crane operators. Additional rulings are also at this time being formulated, which will tend to make the operation of belt operators in cereal mills, malt houses, etc., a reasonably safe proposition.

REPORT OF

LICENSING OF MOTION PICTURE MACHINE OPERATORS.

YEAR—1919.

The standard code on the operation of motion picture machines using inflammable films, adopted by the Industrial Board, became operative on March 1, 1918. This code provided that no motion picture machine using inflammable films shall be operated in this State unless the operator of the machine is at least eighteen years of age, and is an operator licensed as described in section 2 of the code.

As preparations for the enforcement of the code were about completed, a contingency arose which affected the age limit of the operator. The United States being at war with Germany, hundreds of operators eighteen years of age and over, left their machines to the care of younger men and went into the service of the country. Owners of theatres throughout the United States, cognizant of the minimum age of operators, foresaw the crippling of their industry if the code were enforced. They strongly urged the postponement of the code's provisions or that the minimum age limit be lowered. The latter request was considered by the Industrial Board on September 11, 1918, and an emergency war measure was adopted permitting operators sixteen years of age and over to be licensed as motion picture machine operators.

Advanced information of the proposed amendment was sent to all exhibitors as examinations had been scheduled for September 7 and 9, 1918. As a result of these examinations, licenses were granted to 825 operators. Fifty operators failed to qualify, ten of these, however, qualified at a subsequent examination. Owing to rush of work at the State Printer's, the sending out of license certificates was delayed; therefore, the cards were marked valid for the year 1919. The examination of March 4th was held under the revised code. This emergency war measure was later rescinded by the Industrial Board.

During the year 1919, seven hundred and ninty-six operators were licensed, making a total of 1,621 licensed operators in the State.

In section 2 of the code, an operator is considered as licensed, "if he holds a license from a local board or bureau created by law or ordinance to issue such licenses for the particular town in which he operates."

FILM FIRES AND THEATRE PANICS.

Section 5 of the motion picture code requests that every film fire, together with the apparent cause thereof, shall be reported promptly by the operator through the manager to the Department of Labor and Industry, at Harrisburg.

Commonwealth of Pennsylvania

THE BULLETIN

OF THE

Department of Labor and Industry

CLIFFORD B. CONNELLEY
Commissioner

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1920.

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LETTER OF TRANSMITTAL

Hon. Clifford B. Connelley,
Commissioner of Labor and Industry,
Harrisburg, Pa.

Sir: I have the honor to transmit herewith the report of the activities of the Division of Industrial Hygiene and Engineering for the years 1918 and 1919.

Respectfully submitted,
FRANCIS D. PATTERSON,
Chief of Division.

ANNUAL REPORT

DIVISION OF INDUSTRIAL HYGIENE AND ENGINEERING

1918

The Act of 1913 creating the Department of Labor and Industry provides in section 10 that:

> "The inspectors of the fourth grade shall constitute a division of industrial hygiene, which shall be under the immediate charge of the Commissioner of Labor and Industry. The members of the division of industrial hygiene shall make special inspections of factories and mercantile establishments and all rooms, buildings or other places subject to the provisions of this act; and shall conduct special investigations, throughout the Commonwealth of Pennsylvania relative to industrial processes and conditions. The members of such division shall prepare material for leaflets and bulletins, calling attention to dangers in particular industries and the precautions to be observed to avoid them and shall perform such other duties and render such other services as may be required by the Commissioner of Labor and Industry. Each member of said division shall make an annual report to the Commissioner of Labor and Industry, which shall be transmitted to the Legislature as part of the annual report of said Commissioner."

CODES OF SAFETY STANDARDS.

The formulation, revision and rearrangement of the Departmental Codes of Safety Standards has been one of the functions of this Division since the inception of the Department.

During the year the following work on codes was performed:

Codes completed and adopted—Plant Railways, Printing and Allied Industries.

Codes revised—Power Transmission Machinery, Bakeshops, Lighting, Elevators, Motion Picture Machine Operation.

Code rearranged—Machine Tools.

Codes in process of formulation—Head and Eye Protection, Means of Egress.

EXPLOSIVES AND AMMUNITION.

The supervision of the explosives industry has been another of the functions of the Division of Industrial Hygiene and Engineering, and during the year 1918, on account of the war, there was urgent need for maximum production of explosives and ammunition while the necessity for the conservation of life and of property by the maintenance of safe working conditions required the utmost vigilance upon the part of the members of this Division.

The kind of product and the conditions of manufacture differed widely in the various plants located within the borders of our Commonwealth, some plants requiring more frequent inspection than others.

It is a pleasure to formally record the very cordial relations which have existed between the manufacturers of explosives and of ammunition and the members of this Division and to express appreciation of their prompt compliance with the suggestions of this Division, and their cooperation in all matters pertaining to the safety and health of their employes.

During the year 1918, the explosives industry in this country occupied one of the most important places in industry. Both men and women has been urged to bend their energies toward supplying this material in sufficient quantities for our own army and for the armies of our allies. This sudden transformation of the industrial world from a peace basis to a war basis carried with it a vast number of problems involving matters of labor as well as those having to do with special technical processes. This work necessitated the manufacture of compounds in which knowledge of the nature of the chemical processes involved and the nature of the product itself was necessary. This condition created a special demand for greater supervision in munition plants.

The need for such supervision was especially felt in the State of Pennsylvania where a large portion of the explosives used in the present war was manufactured. As the need for explosives became more acute, it was necessary for this Division to give more time and attention to the explosives industry because the safest methods of manufacture, storing and handling were sacrificed in order to increase production to maximum capacity. This was accomplished by detailing one member of the Division of Industrial Hygiene and Engineering to give his whole time to the inspection of plants handling, manufacturing, or storing explosives. As the war proceeded, and the number of explosives plants increased, it became necessary to create a Division of Explosives, whose duty it was to see that full compliance with the State laws and regulations in regard to explosives and chemicals related to this industry were observed.

This work may be divided into two main heads: first inspection; second, investigation. The former includes inspections, reinspections, visits and issuing of instructions. The latter includes investigations, accidents, and other investigations which were necessary to gain information to be used in compiling standards, making recommendations, and in removing the possible sources of danger.

INSPECTION

Inasmuch as the inspection of explosives plants is in itself dangerous, and to avoid duplicate investigations, the personnel of this Division was required to make complete inspections.

The plants are usually large and cover many acres of ground. It was, therefore, seldom that an inspection required less than two days, and in many instances three and four days. The inspections covered guarding of machinery, power transmission, exit facilities, fire hazards, safety and welfare organizations, health hazards, plant guard systems, water supply, light, heat, and ventilation housekeeping in and about buildings and plant areas: also the handling, storing, and manufacturing of explosives. The great demand for explosives made it difficult to know what was the best course to take where conditions were extremely unsatisfactory, and the demand for powder acute. In such cases, joint action of the Army or Navy Ordnance and this Division accomplished results.

The conditions in several plants, which were abnormal in every way, especially with respect to health and housekeeping, caused them to be considered a special menace to life and limb. In such plants compliances were made in a most dilatory manner, and in extreme cases only after drastic action had been taken. The management seemed to think that production was more important than safety. In several plants in order to eliminate the most serious hazards a portion of the plant was closed. In every instance the discontinuance of all operations was considered temporary, but the abrupt ending of hostilities in the war zone caused the shut downs to become permanent. Additions and improvements to plants necessitated a large number of re-inspections.

In order to eliminate, as far as possible, all hazards, necessary instructions for betterment were issued. Such instructions varied from a few sentences to four closely typewritten pages. These covered various conditions which did not conform to the State Law and State regulations. The greatest offense was that of housekeeping, washing, eating, drinking, and ventilation facilities. The conditions at some plants required an inspection once a week, others once in two weeks, but for the most part one inspection and one reinspection to check instruction compliances was all that was required. At some plants even a second visit was not necessary. The number of inspections made is as follows:

First inspection 43; Re-inspections, 87; Check Inspections 116; Number of Orders Issued, 21; Compliances, 10; Compliances substitute, 3; Non-compliance, 5; Time Not Up, 3.

In regard to the instructions the following explanation should be made: The ten compliances were complete in every detail. The three compliances substitute were in places where the management offered substitutes which were satisfactory. One instance was rebuilding the whole area instead of only cleaning up the old area.

The five non-compliances are places where the instructions were extensive and to some degree costly and where the likelihood of early peace did not justify the extensive changes necessary for compliance.

The three non-compliances due to time not up are the result of the time limit not being reached, rather than to a disinclination on the part of the manufacturer to comply with the orders issued by the Division.

In all inspections and in nearly all instruction compliances the hearty cooperation of the management has been received.

Closely allied with inspection and issuing of instructions for betterment of working conditions, and of equal importance, is the investigation of plants and their process operations, the object being to bring about a closer cooperation between the manufacturer and the state officials and at the same time, to offer suggestions leading to the possibility of increased efficiency.

During the year this Division has given a large amount of time to special investigations covering such subjects as the best means of extinguishing TNT fires, the elimination of match carrying in explosives plants, and several special investigations of explosives and fatal accidents. In order to gain first hand information of all explosions and fires resulting in loss of life and property, a circular letter was prepared and sent out to the several explosives plants requesting that notice of such accidents be telephoned or telegraphed to Harrisburg. In this part of the work a large amount of information was furnished by the various plants. This information made it possible to prepare a short paper on the best methods of extinguishing TNT fires and also a summation of the problems met with in attempting to prohibit the practice of carry matches in the plants which come under the jurisdiction of the Division.

In connection with special investigations of accidents, the immediate cause was sought and wherever possible an explanation offered, substantiated by all the technical data available. In one instance a special set of experiments was conducted by one of the research chemists of a large munition plant in this State, and the results submitted to this Division, in order to determine the effect of static electricity on nitrostarch.

Thus, it will be seen that a most cordial cooperation has existed between the Division and the munition manufacturers in an attempt to reduce to a minimum the number of accidents which may occur in this industry.

Blue prints of standard safety devices particularly adapted to the needs of explosives plants were available and were sent out to each plant manufacturing or handling explosives located in this State.

In every instance it has been the desire of the Division to offer constructive criticism and cooperate in every way possible to make working conditions the very best, both from a safety and a sanitary point of view.

A STUDY OF THE VALUE OF WATER vs. STEAM IN DROWNING TNT FIRES.

By Dr. E. A. Harding.

In order to determine, if possible, the relative merits of water and steam in extinguishing TNT fires which might occur at the different stages in its production, several communications were sent to manufacturers of TNT both in this country and Canada.

As a result of this correspondence five stated that they did not have the available information on the subject, three that they had found water in actual experience more efficient, and two that in their opinion steam would prove more effective. In other words, those speaking from actual experience concurred in the opinion that water is more effective of the two.

The problem to be solved is to extinguish a fire in a body of material which contains within itself all the constituents necessary for combustion. Such combustion will take place spontaneously when the combustion temperature or, "flashing point" of the material is reached. Therefore, it is necessary not only to extinguish the fire but to lower the temperature of the material to a point below the "flashing point" or the point at which it will take fire spontaneously. Realizing that there were in reality two conditions to be met, two well-known authorities concurred in the opinion that water not only drenched the TNT but at the same time produced a cooling effect which would tend to lower the combustion temperature of the same. As a substance can burn only when raised to combustion temperature it will be seen that the matter of keeping the temperature below this point is very important.

Water not only exerts a cooling effect directly upon the heated object, but with the generation of steam a considerable quantity of heat which is necessary for the formation of steam is consumed and thus removed from the immediate vicinity of the burning object. Therefore the cooling effect of water is produced in two ways; first, by the direct influence of the water itself; and second, by the extraction of heat in the formation of steam.

On the other hand, steam in order to be most effective should be delivered to the seat of the fire direct from a steam generator under high pressure. Such steam acts by virtue of its expansive power, whereby the atmospheric oxygen is displaced from the immediate vicinity of the burning object with such violence that the fire dies out from lack of oxygen. In other words, the steam exerts a smothering effect which would not be sufficient for a TNT fire because, as has been stated, TNT contains within itself all the elements necessary for combustion. Moreover, high-pressure steam in order to be most effective must be applied in a closed room. In most TNT operations the buildings could not be made sufficiently tight to give maximum efficiency. Another objection that should be raised in connection with steam under high pressure would be its scattering effect on the burning material.

Steam delivered at a high pressure would tend to force the burning TNT out of a shallow open-topped grainer in all directions and thus prove to be a menace in handling the fire. Even water applied under a high pressure would present the same hazardous situation by scattering the burning material to all parts of the building. In order to combat these fires successfully it would appear that they can be best handled by the use of a sprinkler system from a one inch pipe line.

One well known concern equips all grainers with both open and closed sprinkler heads; the idea being that when such a fire occurs the operator can drown it by means of the quick opening valve located adjacent to the grainer or kettle. If, however, the operator is panic stricken and leaves the building without opening the valve, the closed sprinkler system is relied upon to extinguish the fire. A one inch open and one inch closed sprinkler head is set immediately over each graining bowl or melting kettle.

In conclusion, it may be said that experience has shown that of the two methods under consideration, water applied under low pressure from sprinkler heads properly located, is most effective in drowning TNT fires.

THE PROBLEM OF MATCH CARRYING IN PLANTS MANUFACTURING AND HANDLING EXPLOSIVES

By Dr. E. A. Harding.

The question of the match in connection with plants engaged in the manufacture and handling of explosives and also nitro and amido compounds assumes a very complicating and perplexing problem. It is desired to enforce its prohibition from within the areas of such plants and, for this purpose the following section from the State Explosives Code is quoted:

INDUSTRIAL BOARD RULING.

Vol. 1. No. 19 Safety Standards of the Industrial Board, Pennsylvania Department of Labor and Industry. Section 19, Matches:

> "No employee shall have in his possession at any time in any explosives plant, any match or other flame producing device unless he is authorized in writing by the Superintendent to do so, in which case approved safety matches only may be used.
>
> "A search for matches shall be made by some authorized person at least twice a week at irregular intervals. The finding of a match or other flame producing device on the person of an employee not authorized to have matches in his possession shall be cause for instant dismissal, and the facts shall be reported to the Commissioner of Labor and Industry."

This is, then, the substances of the Industrial Board ruling regarding the match question in connection with explosives plants. For further publicity of this section the following placard is issued by the Department of Labor and Industry and copies of the same may be obtained upon application to the Chief of this Division.

Department of Labor and Industry

INDUSTRIAL BOARD

MATCHES AND OTHER FLAME-PRODUCING DEVICES

WARNING!

> "MATCHES: No employee shall have in his possession at any time in any plant where Nitro and Amido Compounds are manufactured or handled, any match or other flame producing device, unless he is authorized in writing by the superintendent to do so, in which case approved safety matches only may be used.

"A search for matches shall be made by some authorized person at least twice a week, at irregular intervals. The finding of a match or other flame producing device on the person of any employee not authorized to have matches in his possession, shall be cause for instant dismissal, and the fact shall be reported to the Commissioner of Labor and Industry.

"Every person or persons who violate any of the provisions of Act 267 of June 2, 1913, or any of the rules or regulations of the Industrial Board, or who resist or interfere with any officer, or agent, of the Department of Labor and Industry in the performance of his duties in accordance with the said rules and regulations, shall be deemed guilty of a misdemeanor and shall, upon conviction thereof, be punished by a fine of not more than one hundred dollars, or by imprisonment not exceeding one month, or both, at the discretion of the court.

THE INDUSTRIAL BOARD
DEPARTMENT OF LABOR AND INDUSTRY."

The above is the ruling as incorporated in the Safety Standards and the steps taken to acquaint the plants engaged in the manufacture and handling of explosives and of nitro and amido compounds with this ruling and its enforcement.

PLANT METHODS.

The methods used to eliminate the practice of carrying matches under the conditions just stated were investigated in several plants engaged in the manufacture and handling of explosives.

It is almost universal to conduct some system of search for matches upon the person of the employee at the gates of the plants as he enters. Before the search is begun the workman is warned by conspicuous signs that he must search himself and make certain that he has no matches upon his person. He is further warned by the penalty which follows the finding of matches upon his person by a list of those discharged on the day previous for such an offense. After he has satisfied himself that he has no matches in his possession he advances to the guard at the gate for the official search. This search takes a variety of forms. In some instances the guard carefully inspects each man as he enters including his lunch pail if he carries one. The clothing is carefully inspected by running the hands over the pockets from the outside and giving special attention to matches that may exist loose in the pocket. Such a search is conducted on every person entering or leaving the plant.

Many plants follow the method of searching every fifth or every tenth man as he enters the gate or of selecting men at random to be searched. In this way it is thought that a more thorough examination can be given than would be possible if every man entering were searched.

Still another practice pursued is merely to inquire whether the person may have matches in his possession. This method is prevalent only in the smaller establishments where a comparatively small number of men is employed and a large number of women.

Supplementing the search at the gate, many of the large plants conduct what is known as "surprise searches." These searches are conducted in the plant while the employee is at his work and may take place once or twice a week in each particular unit.

The penalty inflicted on an employee who has been found to have matches in his possession varies from plant to plant. In some instances the first offense means immediate dismissal from the plant with no opportunity left for the worker to be re-employed at a future date. This is the extreme penalty. In another instance the first offense means the loss of the bonus paid by the company for a

period of six months. Some plants make the first offense a warning without dismissal, the second offense a suspension for a short period of time and the third means permanent dismissal from the employ of the company. When dismissals are based on this plan very much depends on the judgment of the person making the search. If his suspicions are justified that the matches were taken into the plant intentionally he can recommend immediate dismissal on the first offense.

Thus, there are in practice two general methods of search: first, a complete search of each man both on entering and leaving the plant; and second, an irregular search conducted each morning as the men present themselves at the gate entrance. Both of these two general methods of match search are supplemented by the practice of surprise searches conducted while the men are at work. The other method pursued is that of a mere verbal search for matches. This method of search, as already stated, is carried out only at small plants where the number of employees is not very large.

One of the most dangerous practices is that of carrying loose matches in the pocket. There are a number of possible hazards in that the match may work its way into the lining of the worker's clothes and thereby escape the notice of the workman himself and also the attention of the match searcher. In such instances the match may finally work itself free and fall to the floor of one of the buildings in which it is strictly forbidden to carry matches. Thus, a workman may be absolutely unaware of the presence of such a match and lay himself liable to discharge as well as endangering lives and property. In order to eliminate the possibility of a man carrying loose matches in his pockets, one plant has adopted the plan of giving to each employee an individual match safe bearing his number. These safes are the property of the individual so long as he remains in the employ of the company. They are kept supplied with matches by the company, being refilled when they are turned in at a special office outside the plant gate, before entering the plant proper. While this method may seem to be somewhat elaborate, it has been found to be very effective in the elimination of the loose match from the clothing of the employee.

DISCUSSION.

There is no doubt in the minds of those to whom the nature of explosives is at all familiar, that the match hazard is one of the most serious dangers encountered in and about explosives plants. Every means should be taken to eliminate or reduce to a minimum this hazzard.

The first place to begin is the education of the employee as he enters the service of the company with special emphasis placed on the match hazard. At the same time he should be compelled to turn all pockets inside out, be subjected to a thorough search and instructed wherein the real danger lies. The penalty which is inflicted when matches are found and specific instances given in which the penalty has been carried out should be cited. This work could be placed in charge of the Safety Department and the candidate could then be turned over to the employment bureau and instructed to work his way into the plant. This would serve to impress on his mind that he is dealing with realities and real dangers and that he is not only responsible for his own safety but in a far greater measure responsible for the safety of hundreds of others employed in the same plant.

All guards and officials engaged in match searching should be provided with some standard uniform. This should serve to emphasize the fact the employee is dealing with a person of authority. The practice, on the part of the guard, always to maintain a military bearing at all times, courteous yet firm in his manner should be encouraged. Furthermore, he should be sufficiently equipped to meet any emergency which may arise in the performance of his duties.

A thorough and most rigid examination is to be highly recommended as the employee enters the plant. It is doubtful whether the idea of surprise searches is wholly without fault. If a man finds that he has overlooked a loose match in his pocket and he stands in fear of a search while at his work, his first instinct is to rid himself of that match with the possibility of his throwing it away or hiding it in some place in the building where he works. A thorough examination at the gate on entering and supplying each man with a match safe would tend to eliminate this possible hazard.

Moreover, the construction of adequate change houses located at such points that it would be impossible for an employee to enter the plant proper without changing from his street clothes to his work clothes, would aid in eliminating the practice of carrying matches in the plant. Such a change house could be constructed on the plan as devised by Dr. Francis D. Patterson or any other plan fufilling the conditions equally well. Dr. Patterson's idea is essentially that the street clothes of the worker are placed in steel lockers in one-half of the change house and the workman then passes through a passageway connecting with the second half of the change house in which he has deposited his work clothes in similar steel lockers.

Under no circumstances should the search be merely verbal. Some physical search should be conducted, and, as stated in the Explosives Code, at least twice each week. No matter how small the plant may be or how few the number of laborers, if there are explosives manufactured or handled, the carrying of matches constitutes a real danger which must not be overlooked.

THE MATTRESS ACT

Another activity of this division is the administration of the Mattress Acts of 1913 and 1915, the inspection work being carried out by Dr. Edward B. Joachim.

Each year since the enactment of the amended legislation of 1915, covering the Mattress Act, there has been a noted improvement in conditions surrounding the mattress making and selling industry. There has been a continual tightening of the material market, which has restricted available materials for use for filling mattresses.

The Federal Government early in the year began to devise ways and means to conserve "Cotton Linters" for use in munitions, and to that end every concern which had a stock of "linters" was obliged to report quantity on hand, and the price which was paid for this material.

Every cotton broker, manufacturer, mattress, quilt and absorbent cotton manufacturer throughout the United States, was obliged to submit to this survey; which resulted in the stocks being commandeered and an appraisement and classification of the grades being made by inspectors of the Federal Government.

"Cotton Linters" have always been the mainstay of the Mattress Material market. Consequently, since the world war started, the price of "linters" became higher and higher until the point was reached that the grade of this valuable material for mattress filling became lower in classification and excessive in price, and the great majority of manufacturers were obliged to abandon it entirely and turn their attention to other materials.

I am convinced that every reputable manufacturer who did so regretted being obliged to resort to lower grade materials for the cheaper mattresses, especially, those who felt it incumbent on themselves to turn to the grades in colored cotton waste, and thereby market a material which is now coming back to cause so much trouble. Colored stock in nearly all instances is looked upon with suspicion.

When a purchaser of a mattress buys a mattress, he or she is looking, for a felt mattress and when the word "felt" is mentioned they naturally imagine it is always as white as the driven snow, when in reality it is any color from white to indigo, and possibly all the colors of the rainbow combined. Many high grade manufacturers who have maintained their white standard are thus placed at a disadvantage in competition with others who have resorted to colored stock, especially, as a shoddy mixed with new colored stock is very hard to detect, as well as mixed colored stock with second hand material, and the inspector must watch for illegal combinations of materials.

Nine-tenths of the complaints are caused by misrepresentation of sales persons in retail stores, and without looking for the statement on the tag, the purchaser usually rushes to the inspector and enters a complaint. Upon investigation, the trouble is usually found to be with the color of the material, which is at once denounced as shoddy by everyone who does not know. It is not within the province of the inspector to intervene between a merchant and his customer, providing the article manufactured or purchased comes within the requirements of the law.

That the Mattress Act of Pennsylvania is looked upon as a wise measure and has attracted attention is shown by the reprint of an editorial in the Chicago Evening Post of January 10, 1918:

THE CHICAGO EVENING POST

Thursday, January 10, 1918.

MATTRESSES AND HEALTH

"Many a sick person has regained health thru the rest enjoyed on a comfortable mattress, and, if truth were known, many a well person has contracted disease thru the medium of a mattress in whose interior nested the germs of contagion.

"Very generally now throughout the country state laws are in effect requiriug the use of sterilized material in the mauufacture of mattresses. Pennsylvania has a law that is considered the model for such legislation. It makes compulsory the labeling of every mattress with a guaranty that the goods used in its making conform to health standards. The nature of the materials must also be set forth, so that the purchaser may know exactly what he is buying.

"Before the passage of this law a big and profitable business was done in the manufacture of mattresses from old material. There was no assurance that much of it did not come from bedding discarded in homes, hotels or even hospitals, where disease had fertilized the wool or feathers with millions of germs. No precaution was taken to guard against the inevitable spread of sickness thru the stuffing of new ticking with this contaminated material. It ought to have been burned. Instead, it was sold at attractive bargain rates, its filthy condition concealed by the fresh covers.

"Against this unscrupulous profiteering the people of Pennsylvania and many other states are protected; but not the people of Illinois. The legislature of this state enacted a law designed to afford some measure of security to the public, but it was declared unconstitutional on a technicality. Hence the cheap, rebuilt mattress floods the Illinois market, and unsuspecting persons are lured into buying an article at a low price iu dollars that may cost them health and life.

"Surely, this is an evil that ought to be euded. Our women's organizations will appreciate the importance of agitating for a law such as that obtaining in Penusylvania. No matters are of more importance to health than food and rest. The manufacturer who wilfully adulterates the things we eat is no more guilty thau he who makes and sells a mattress that may be nothing less than a culture bed for disease and death.

"The Post urges upon those agencies that give themselves to guarding the public welfare the importance of including this intimate phase of the people's home life in their programs of reform. And, while we await legislation, we advise all our readers to exercise caution in the purchase of mattresses, especially when the chief inducement is an underselling of established brand."

This State is a large one, and there are thousands of persons engaged in the selling of mattresses. It is impossible to get over all sections of the State in a year's time. Many manufacturers from outside of the State are shipping mattresses here and particular pains have been taken to meet either the manufacturer or his representative and explain the requiremnts of the law. No one eugaged in this business need be ignorant of the law and they have themselves to blame if prosecutions are recommended against them.

The War is practically over and while the market for material is still high there is no excuse for violations. The Federal Government has released all commandeered materials aud they are now available for use.

Pennsylvania manufacturers furnished many thousand of mattresses for the use of the army and navy during the year and while iu every instance the materials used in filling were legal, conditions surrounding the manufacture of the product were not always altogether hygienic and sanitary. This has been rectified as far as possible.

There has not been a single strike or stoppage of work due to any labor disagreement or dispute in the mattress industry of Pennsylvania during the past three years.

The problem of handling "silk floss" is little understood by the trade. Most of the manufacturers are guessing at it, and some are mixing it with "Egyptian alsatian cotton" and "cotton comber," but not designating it as an adulterated product. This is clearly illegal under the mattress law. "Silk floss" is the common name for "Kapok," an imported fibre having a silky lustre, and is almost exclusively used by the U. S. Navy as a filling material for life belts, and designated as a filling material for mattresses aboard vessels, which can also be used as a small life raft in the event of necessity. Any one can easily imagine what would happen with an adulterated silk floss mattress if used as a life saving adjunct. The buoyancy would be lost.

The mattress manufacturers of this State, who supplied "silk floss" pads to the U. S. Navy, found there was a wide divergence in tests on pure silk floss pads of from 39 per cent. to 55 per cent. in buoyancy tests. To anyone understanding the characteristics of silk floss, it is plain just why these discrepancies should occur, the greatest of which is based on the classification or grade of the floss.

But the greatest single factor to be taken into consideration by the mattress manufacturers is in the matter of processing or a proper and efficient system of heating the material before stuffing it into a pad or mattress; and to get the very best results, a thorough understanding of the material in its physical make-up is essential.

Silk floss is a fibre pure and simple, as well as the lightest in weight or buoyancy of all mattress materials. A minute examination of the separate fibres conclusively shows them to be a mass of cells which are not discernible to the naked eye. These cells, under the great stress or force of compressing the material for shipment in bales, are apparently destroyed and the only way these cells can be brought back to their original condition is to process the material with heat which causes the fibres to swell and resume their normal physical appearance, and the only required agent to do this is by the installation of a heating system which will be at all times effective and not a guess work mechanism. If the cells in the fibre are not properly opened by heat (the only known agent which will effectually do it) there is a loss in buoyancy corresponding to the extent of such retained compression or distortion of the size of the cells.

There is an increased number of employes in the mattress factories of the State and this is accounted for by the fact that dealers have confidence in the product of Pennsylvania manufacturers and the rigid inspection given all places where mattresses are made. Therefore, the dealers or venders feel security in such inspection. The business of the manufacturers is likewise prosperous, and a record breaking amount of business was done which shows that the mattress law is a stimulator to the business. This is frankly admitted by all concerned.

Fire hazard in mattress factories still exists, and there have been several disastrous fires. The accumulation of lint, fibre and excelsior waste on stairways, and in work rooms is extremely dangerous. Every effort is made to improve this condition.

In the matter of the sale of second hand mattresses there is a vast improvement, and if the Division had authority to prosecute individuals on sight for this kind of a violation, the work could be carried on much more effectually.

Complaints continue to come in that the Pennsylvania Mattress Laws is being enforced in the interests of Pennsylvania manufacturers only. The complaints are groundless and the law will continue to be enforced.

The number of inspections and visits made to factories, warehouses, showrooms, and stores totaled,	1,240
The number of new mattresses, mattress pads, davenports, day-beds, and porch couch hammock pads under inspection totaled,	190,000
The number of mattresses rejected and condemned for having illegal materials used in filling totaled,	16,500
The number of mattresses rejected and held for having an illegal form of tag, or a tag made of improper material, and for misleading and incomplete information totaled,	32,000
The number of second hand mattresses for which requests were received for information relative to their disposition, which in many cases resulted in their condemnation and destruction, totaled,	1,850
The number of bales of materials for the manufacture of mattresses found in factories and warehouses totaled,	28,800
The number of bales of raw stock and manufactured stock, such as felt, rejected totaled,	4,500
The number of samples submitted during the year of raw stock and manufactured felt stock by cotton brokers and cotton batt manufacturers for classification and approval totaled,	1,400
The number of samples rejected as classified above, totaled,	625
During the year calls and visits from manufacturers, representatives of manufacturers, cotton brokers, and others seeking information totaled,	165

At the request of the chairman of the Workmen's Compensation Board of this Department, one of the medical inspectors, Dr. Walter H. Blakeslee, of this Division, was assigned for duty with the Board. He examined 316 injured workmen, attended and testified at 198 hearings, submitted written reports on the medical aspect of the cases in 15 instances, and assisted in writing the special article published by the chairman of the Board on "The Medicolegal Aspects of Compensation."

Another of the medical inspectors, Dr. Elizabeth B. Bricker, rendered most valuable service in:

Receiving and compiling data on safe practices in the loading of projectiles with a view of the formulation of a Safety Standard on the subject to be issued by the Industrial Board.

Arranging for the Conference of Industrial Physicians and Surgeons held in Harrisburg on April 9, 1918.

Preparing copy for the printer of the proceedings of the Welfare and Efficiency Conference of the Department held in November 1917.

Preparing copy for the printer and reading proof of the proceedings of the Conferences of Industrial Physicians and Surgeons held on November 20, 1917 and on April 9, 1918.

Preparing copy for the printer and reading proof of the Bulletin on Dichloramine-Chlorcosane and accompanying report blank.

Compiling data on the following subjects: Women in Industry; Labor Laws of the States of the United States governing the Hours of Labor of Women; Night Work for Women; Regulations Governing the Practice of Medicine in Pennsylvania; Progress of Industrial Hygiene during 1918.

With the idea of securing the cooperation of the Industrial Physicians and Surgeons of this Commonwealth in the work of this Division, conferences were commenced in 1916.

The success of these conferences can not be overestimated. At the first conference there were thirty physicians present and at the last there were more than three hundred, not only from Pennsylvania but from Ohio, Illinois, New Jersey, New York, Massachusetts and other states.

The programs have comprised:

SIXTH CONFERENCE OF INDUSTRIAL PHYSICIANS AND SURGEONS.

Address of Welcome.

Lew R. Palmer, Acting Commissioner, Pennsylvania Department of Labor and Industry, Harrisburg.

The Health Hazards to Women as the Result of the War Emergency.

Mrs. Samuel Semple, Member of the Industrial Board, Pennsylvania Department of Labor and Industry, Harrisburg.

How the Industrial Surgeon Can Best Cooperate with the Government to Win the War.

Edward Martin, M. D. Major, M. O. R. C., U. S. Army, Washington, D. C.

The Nation's Neglect—The Failure to Reconstruct and Rehabilitate the Wounded in Industry.

Loyal A. Shoudy, M. D. Chief Surgeon, Bethlehem Steel Company, Bethlehem.

The Way Out.

Arthur H. Samuels, Captain, Sanitary Corps, National Army, Washington, D. C.

AFTERNOON SESSION.

Hernia—Should it be Classed as a Compensable Injury or a Disease?

A. W. Colcord, M. D. Company Surgeon, Carnegie Steel Company, Clairton.

Does the Two Years' Experience with the Workmen's Compensation Law of Pennsylvania Demand its Amendment, and if so, How?

From the Viewpoint of the Board.

Harry A. Mackey, Chairman, Workmen's Compensation Board, Pennsylvania Department of Labor and Industry, Harrisburg.

Does the Two Years' Experience with the Workmen's Compensation Law of Pennsylvania Demand its Amendment, and if so, How?

From the Viewpoint of the Physician.

Frederick L. Van Sickle, M. D. President-elect, Medical Society of the State of Pennsylvania, Olyphant.

Does the Two Years' Experience with the Workmen's Compensation Law of Pennsylvania Demand its Amendment, and if so, How?

From the Viewpoint of the Insurance Company.

William H. Hotchkiss, Counsel, United States Casualty Company, New York City.

Does the Two Years' Experience with the Workmen's Compensation Law of Pennsylvania Demand its Amendment, and if so, How?

From the Viewpoint of Industry.

C. B. Auel, Director of Standards, Processes, and Materials, Westinghouse Electric and Manufacturing Company, East Pittsburgh.

SEVENTH CONFERENCE OF INDUSTRIAL PHYSICIANS AND SURGEONS.

MORNING SESSION.

Address of Welcome.

James A. Steese, Chief, Bureau of Mediation and Arbitration, Pennsylvania Department of Labor and Industry, Harrisburg.

THE RESPONSIBILITY OF THE STATE.

Towards the Problem of the Physical Reconstruction and Industrial Rehabilitation of the War and Industrial Cripples.

Harry A. Mackey, Chairman, Workmen's Compensation Board, Pennsylvania Department of Labor and Industry.

THE RESPONSIBILITY OF THE INDUSTRIES.

Towards the Problem of the Physical Reconstruction and Industrial Rehabilitation of the War and Industrial Cripples.

C. B. Auel, Director, Standards, Processes and Materials, Westinghouse Electric and Manufacturing Company, East Pittsburgh.

Mechanical Aids to Reconstruction.

R. Tait McKenzie, M. D., Major, Royal Army Medical Corps, Professor of Physical Therapy, University of Pennsylvania, Philadelphia.

Prevention of Industrial Diseases and the Reclamation of the Diseased.

Alfred Stengel, M. D., Professor of Medicine, University of Pennsylvania, Philadelphia.

AFTERNOON SESSION.

Industrial Injuries in New Jersey.

Col. Lewis T. Bryant, Commissioner of Labor of New Jersey, Trenton, N. J.

The Work of the Federal Board for Vocational Education.

H. L. Brunson, Supt., of Placement, Division of Rehabilitation, Federal Board for Vocational Education, Washington, D. C.

Reclamation of the Disabled.

Harry E. Mock, M. D. Lieutenant-Colonel, M. C., U. S. Army, Washington, D. C.

RETURNING THE DISABLED TO ECONOMIC INDEPENDENCE

Some Suggestions as to Future Policy.

Douglas C. McMurtrie, Director, Red Cross Institute for Crippled and Disabled Men; President, Federation of Associations for Cripples, New York.

With the idea of decreasing the lost time due to septic infection of injuries the result of works accidents, the division prepared a bulletin upon the use of the antiseptic "Dichloramine-chlorcosane" and copies of this Bulletin were widely circulated to the industries, the hospitals, and to the industrial surgeons.

Other noteworthy activities of the Division, carried on by the Mechanical Engineer, T. F. Foltz, consisted of:

The examination of boiler and elevator inspectors and motion picture machine operators; the compilation of pamphlets on accidents and their prevention; the preparation of illustrated posters on accident prevention; the examination and approval of all plans submitted to the Department relative to foundries, bakeshops, and dust and fume removal systems; the service on the approvals committee; expert advice on technical subjects to the various members of the Department and to persons outside of the Department seeking information on the operation of the various safety standards; special inspections and surveys, in addition to those enumerated above, of dust removal systems, of the guarding of machinery, of oil well boilers, of women testing electric meters, of women operating chain welding machines, of women working in linoleum plants, of women operating cranes, of minors working on nut tapping machines, of the operation of coal pulverizing plants, and of the felt hatting industry; and addresses before various local and national safety conferences, and in handling an immense amount of correspondence.

ANNUAL REPORT
DIVISION OF INDUSTRIAL HYGIENE AND ENGINEERING
1919

CODES OF SAFETY STANDARDS.

During the year an extensive study was made with the view of revising the Explosives Code, the Nitro and Amido Code, the Dry Color Code, and the Lead Corroding Code and the Paint Grinding Code.

REPORT OF THE CHEMICAL ENGINEER.

The Chemical Engineer, of this Division Major John S. Spicer, returned from his service with the Ordnance Corps of the U. S. Army in France and his activities have been:

TECHNICAL SERVICE.

During the past year the Chemical Engineer has been repeatedly called upon to make inspections and investigations in various industries where reports have reached this Department that conditions are such as to endanger the health of the employees. In some cases these reports originated as a result of inspections by our inspectors while in other cases information concerning these matters was given to the department by interested employees or employers.

The elimination of dust, fumes and gases is a problem which involves not only engineering experience but also chemical knowledge, and for this reason questions relating to this work were properly assigned to the Chemical Engineer for advice.

Several specific instances are worthy of mention. A foundry engaged in the manufacture of castings and of the machining material, containing large portions of lead, was reported to be the cause of numerous cases of lead poisoning. An inspection by the Chemical Engineer of the plant itself and inquiry among the local physicians revealed the fact that the plant offered every facility for the employees to absorb lead into their systems and that many employees during the past two years had contracted the disease in a mild or serious form. Directions were given with reference to the exhaust systems and an immediate correction was made by the company. Later inspections showed an elimination of the sources of trouble.

In another foundry the quantity of dust arising during the removal of cores and castings was complained of. An inspection was made and advice given with reference to the wetting down of the sand and the use of respirators so that there is now a minimum amount of dust present during operation. Owing to the size of the castings and the variety of shapes any other treatment was not practical.

Such instances as related above are indicative of the service which the Chemical Engineer has been called upon to render from time to time during the past year regarding matters of this kind. Each individual case requires individual investigation and treatment but in general it may be said that dust, fumes and gases can be controlled provided hoods, exhaust systems or adequate means of ventilation are used.

Inspections were made in chemical plants including those manufacturing coal tar products, paper, explosives, chemicals, etc., sand and brick, white lead plants and various recommendations given through the district inspector for the elimination of hazards mechanical and otherwise. Details of these reports have been submitted from time to time in conjunction with the individual recommendations which were given to the district inspectors to enforce compliance therewith.

During the last three months, the Chemical Engineer gave considerable attention to the subject of illumination with particular reference to the enforcement of the Industrial Board Code on Lighting. Inspections and conferences with inspectors and supervising inspectors gave conclusive proof that the Lighting Code was being given serious consideration by the industries of this State. This investigation conclusively proved that Pennsylvania was progressively leading the way and that the industries of this State are giving more earnest attention to this subject and are endeavoring to cooperate with the department in the securing of adequate industrial lighting.

During this study the Chemical Engineer had the honor to present the activities of the industries of Pennsylvania along this line before sessions of the Illuminating Engineers' Society both in Chicago and New York.

Besides performing the usual routine office duties in conjunction with the activities of the Division, the Chemical Engineer was called upon to represent the Department at the Seventh Annual First Aid Meet held at Boswell, Pa., by the various first aid teams of the coal mining companies. He was also in attendance and acted as representative of the Department at the Fifth Exposition of Chemical Industries which was held in Chicago during the month of September.

EXPLOSIVES AND AMMUNITION

By Glenn W. Moffatt.

Due to the sudden ending of activities in the World War, the work of this particular part of the Division was greatly reduced. The plants which were working on nothing but war orders were closed as soon as the contract upon which they were working was completed or cancelled. It was necessary to visit each one of these plants and see that any explosive material which was left on the plant was properly stored. Such work together with attending several conferences, rearrangement of material in the storeroom and department legislative reference work took up the first six months of the year.

The remainder of the year was spent in the inspection of plants manufacturing and handling industrial explosives, including nitrogylcerine, dynamite, gelatin, black powder and blasting powder.

Four accidents in which seven men were killed and six injured, were investigated also several accidents in which no one was injured were investigated.

One investigation was of a bad accident which occurred in the home, showing the necessity of watching home work and seeing that none of it is dangerous.

MATTRESS INSPECTION

By Dr. Edward B. Joachim.

The following is a report of mattress inspection for the year of 1919:

The number of inspections and visits made to factories, warehouses, showrooms, and stores totaled,	1,543
The number of new mattresses, mattress pads, davenports, day-beds, and porch hammock pads under inspection totaled,	175,000
The number of mattresses rejected and condemned for using illegal materials in filling totaled,	8,950
The number of mattresses rejected and held for having an illegal form of tag, or a tag made of improper material, and for misleading and incomplete information totaled,	14,560
The number of second hand mattresses for which requests were received for information relative to their disposition, which in many cases resulted in their condemnation and destruction, totaled,	36,550
The number of bales of materials for the manufacture of mattresses found in factories and warehouses totaled,	31,250
The number of bales of raw stock and manufactured stock rejected totaled,	8,500
The number of samples submitted during the year of raw stock (felt) by cotton brokers and cotton batt manufacturers for classification and approval totaled,	1,150
The number of samples rejected as classified above totaled,	325
During the year, calls and visits from manufacturers, cotton brokers, and others seeking information totaled,	135
The number of visits by manufacturers and cotton brokers, etc., from outside of this State totaled,	43
Prosecutions—Total number,	27
Convictions—Total number,	27
Fines—Total amount paid,	$925

The recommendations for prosecutions are only submitted after careful warning has been given, and if persistent violations continue, no other course is open but to prosecute in order to uphold the law.

The work has been carried on with such vigor that everyone now engaged in the mattress business is aware that the law is not a makeshift or a farce, but an effective weapon for the protection of the citizens of this Commonwealth.

There seems to be an erroneous idea abroad that the mattress law is for the exclusive protection of the manufacturers of this State. On the contrary, it is of greater benefit to the workers in the industry than to the manufacturers. Mattress filling materials, especially cotton, which is made from certain forms of cotton waste, is a very dusty product, and like the "shoddy" is a menace to the health of the workers unless they are safeguarded by the installation of proper exhaust systems.

Any lessening of the hazard to the health of a worker, who is liable to become the victim of an occupational disease, is one of the first principles of safety. Therefore, the elimination of dangerous materials such as "shoddy" in a bedding factory, is provided for in our mattress law.

When it is considered that in the beginning of 1916 approximately 95 per cent. of the mattresses sold were illegal from some infraction of the law, and that fully 60 per cent. of these same mattresses were made outside of this Commonwealth, that filthy and vile materials were used for filling; there is comfort and cause for congratulation in the great improvement in the conditions surrounding this business through the enforcement of the mattress law. It has redeemed a business which had fallen into ill repute.

Many calls have been received by wire from dealers who were buying mattresses from outside of the Commonwealth, asking for an examination of the shipment before it was unloaded from the car. Twenty-eight full car-loads were rejected during the year in different parts of the State.

Sixty manufacturers from other states have found it unprofitable to ship mattresses into this Commonwealth if they misrepresented the contents of their products.

Whenever it has been possible, the dealers have notified the out of state manufactures of the illegal conditions of not only their tag, but the materials as well. In a number of instances, these manufacturers assured the Division that they would in the future comply with the requirements of the Pennsylvania law.

In opening these mattresses, it has been found invariably, that the dealers are surprised at the contents. This has been a campaign of education for the dealers and a great many of them express a desire to have the work continue for their own protection.

Many manufacturers have still not given thought, attention, and study to one of the main features of the law,—in fact the most important feature,—the tag itself. They do not define the character of the material, which the law demands. This important point has been explained in detail, and rapid progress has been made.

The tag, required by the law, must be plan muslin or linen, and sewed securely to the covering of the mattress. Paper faced tags are gradually being eliminated and will disappear altogether very soon.

The extreme high cost of materials is constantly bringing forth a combination of illegal materials, which it is difficult to classify.

This classification is important, and prompt identification and condemnation will keep down violations. This also helps the dealer who desires to observe the requirements of the law.

One manufacturer from outside of the State asked a question about shoddy made from new clippings from an underwear mill and a tailoring establishment. The answer to this question was as follows:

"The subject of shoddy has been given a great deal of study and attention during the past two years. This study has been from a technical and physical standpoint, resulting in the elimination of this material as a mattress filler.

"The definition of shoddy is as follows: 'Any material which has been twisted or spun into yarn, or woven into fabric, and subsequently broken up, torn up, or ground up, if retwised or respun into yarn, rewoven into fabric, or reused in the manufacture of any material, is shoddy goods.' "

This clearly covers any shoddy, whether made from any new yarn, fabric, or clipping, or any old yarn, rag, or fabric of which prior use has been made.

The provisions of our mattress law against the use of shoddy and reused materials, as well as the renovation and sale of second-hand mattresses are positive.

Starting on the cutting table, tailors' clippings and underwear clippings are shoved around, and finally find their way to the floor; there to be trampled on by dirty boots and ground into the dust and spittle of tobacco user or tubercular victim. They are then swept up, sorted, and sent to the shoddy mill, and come out so-called new, shredded tailors' clippings.

A scientific examination and study of the difference between the appearance of new cotton and shoddy has been made. If the finest tendril of new cotton fibre is examined under a powerful microscope, there will be clearly seen on the sides of the tendril countless kinks or barbs; those kinks or barbs account for the great strength of cotton and its ease of spinning. These kinks or barbs on the tendrils, uniting with kinks or barbs of other tendrils, do the business. If you examined a tendril taken from a shoddied thread, you would find that in the stress of breaking down the fabric, the kinks or barbs change in character, flatten out, and sometimes are entirely obliterated.

Then again, if you examined the terminal ends of these tendrils, you would find the new tendril terminal is wavy and graceful, whereas in the shoddy tendril it is very short, and the break has an abrupt appearance.

The preservation of the lives of infants depends as much on cleanly bedding as it does upon pure air in a sleeping apartment; and the right of a babe to be well born should not be jeopardized by the odors and germs of contaminated bedding.

Hundreds of samples of materials from mattresses in factories and shops, as well as in warehouses and salesrooms have been taken from finished products in order to furnish positive proof of the extent of the violations of the law in materials used in mattresses.

These samples tell a wonderful story of fraud and deceit, and the possibility of the dangers from infection and disease to the inhabitants of this as well as other states. They may be the old, torn and tattered remnants of old clothing, which usually masquerade as "tailors' clippings" or the rags from the underwear of human derelicts, infected with vermin and disease, or from the storage of damp and musty rag cellars and warehouses or from burlap bags and gunny sacking of doubtful cleanliness.

The excuse for using this material is that it is hard to get good stock cheap and people must have cheap mattresses, but all manufacturers are on an equal basis and the percentage of profit is no lower than in former years; in reality, the actual profit is greater owing to the increased cost of material and the correspondingly increased price of the mattress.

Thirty-six thousand five hundred and fifty second-hand mattresses were destroyed at various times during the year, the largest number that has been under observation in the State in any one year.

Thirty-six thousand of these mattresses were sold by the United States Army and Navy, and were converted into paper stock.

The condition of many of these second-hand shops is a menace to the community. All places, where household goods or which prior use has been made are kept for sale, should be disinfected at frequent intervals.

However, there has been vast improvement in the mattress business of Pennsylvania since the passage and enforcement of the mattress law.

At the request of the chairman of the Workmen's Compensation Board, of this Department, one of the medical inspectors in this Division, Dr. Walter H. Blakeslee, was assigned for duty with the Board and examined 216 injured workmen; attended hearings before the Referees for the purpose of giving testimony or examining cases at the request of either one of the parties to the suit or when requested by the Referee. These hearings were held weekly thru out the year and the number of cases disposed of at these hearings varied in number; attended hearings before the Board and cases of appeal, de novo, commutation, etc., to examine cases and testify at the request of the Board.

These meetings were held at Harrisburg, Philadelphia, Pottsville, Wilkes-Barre and Scranton, at various times thru-out the year; reviewed the testimony of twenty cases of appeal to the Board or of hearings de novo, when asked by members of the Board to do so and submitted written opinions on the medical question involved to the Board; visited the following places in the interest of compensation at various times thru-out the year,—Washington, D. C., Johnstown, Allentown, Wilkes-Barre, and Scranton.

Another of the medical inspectors, Dr. Elizabeth B. Brieker, rendered most valuable service in: preparing copy of the proceedings of the Seventh, Eighth and Ninth Conferences of Industrial Physicians and Surgeons for the Pennsylvania Medical Journal and proof-reading the same; preparing copy of the Seventh and Eighth Conferences of Industrial Physicians and Surgeons for the state printer; preparing copy of the list of Industrial Physicians and Surgeons for the printer and proof-reading the same.

She compiled data on: methods of sealing blast furnaces to avoid carbon monoxide poisoning while doing repair work; health insurance; equipment for first aid cabinets; shower baths in industrial plants and wartime activities of Division.

She compared proposed issue of rulings of Industrial Board with minutes of Industrial Board, and commented on the same. Also compared and commented on new bakeshop law with Safety Standard No. 9 on Bakeshops.

She attended the following department conferences: Eighth Conference of Industrial Physicians and Surgeons, in Pittsburgh; Ninth Conference of Industrial Physicians and Surgeons in Harrisburg; conference of Department members with representatives of safety organizations of various Pennsylvania firms in Harrisburg, and the State Conference of Social Workers, in Harrisburg, and annual sessions of State Medical Society of Pennsylvania, in Harrisburg.

She inspected the tannery of J. K. Mosser and Company, Mahaffey, on a complaint of improper bathing facilities for the workers; the shops of the Pennsylvania Railroad Company at Altoona and Hollidaysburg on a complaint of the occurrence of lead poisoning among the workers in these shops; the Universal Chain Company, Stroudsburg, on request from the Scranton office to pass on the effects of the fumes generated in the various processes and the removal of the same from the workroom; the Mt. Union Refractories Company and the Harbison Walker Company at Mt. Union for information regarding the methods of dust removal; the Juniata Glass Sand Company, Mapleton, on a complaint that the company produced a dust nuisance in the neighborhood; and the Philadelphia Roll and Machine Shop, Philadelphia, on a complaint that the company maintained a nuisance in the neighborhood by permitting the escape of dust into the vicinity from the cleaning of castings.

During 1919, the Eighth and Ninth Conferences of Industrial Physicians and Surgeons were held and the programs comprised:

EIGHTH CONFERENCE OF INDUSTRIAL PHYSICIANS AND SURGEONS.

MORNING SESSION.

Address of Welcome.

Walter McNichols, Acting Commissioner, Pennsylvania Department of Labor and Industry, Harrisburg.

Traumatic Hernia and the Workmen's Compensation Boards.

Francis D. Patterson, M. D., Chief, Division of Industrial Hygiene and Engineering, Pennsylvania Department of Labor and Industry, Harrisburg.

How the Industrial Physician and Our State Department of Health Can Best Cooperate.

Edward Martin, M. D., Colonel, M. C., U. S. Army, Commissioner of Health, Pennsylvania Department of Health, Harrisburg.

Carbon Monoxide Poisoning Prevention and Treatment.

A. J. Lanza, M. D., Senior Surgeon, United States Public Health Service; Chief, Division of Industrial Hygiene and Medicine, Working Conditions Service, United States Department of Labor, Washington, D. C.

Injuries to the Back and Flat Feet.

James O. Wallace, M. D., Pittsburgh.

AFTERNOON SESSION.

Health Hazards in the Manufacture of Dyestuffs.

Alice Hamilton, M. D., Bureau of Labor Statistics, United States Department of Labor, Washington, D. C.

Health Insurance—Its Disadvantages and Advantages.

John A. Lapp, Formerly Director, Ohio Health and Old Age Commission, Columbus, Ohio.

Health Insurance and the Public.

Frederick L. Hoffman, LL.D., Third Vice-President and Statistician, The Prudential Insurance Company of America, Newark, N. J.

How the Industrial Physician Can Help in the Campaign Against Venereal Diseases.

Russell A. Jewitt, M. D., United States Public Health Service, Washington, D. C.

Report of Committee Appointed to Consider the Question of Traumatic Hernia in Relation to the Workmen's Compensation Law.

NINTH CONFERENCE OF INDUSTRIAL PHYSICIANS AND SURGEONS.

MORNING SESSION.

Address of Welcome.

Clifford B. Connelley, Commissioner, Department of Labor and Industry, Commonwealth of Pennsylvania, Harrisburg.

The Medical Profession and the New Workmen's Compensation Act of Pennsylvania.

Frederick L. Van Sickle, M. D., President, Medical Society of the State of Pennsylvania, Olyphant.

Sanitary Disposal of Sewage and Trade Wastes, and Consideration of What Constitutes a Proper and Adequate Drinking Water Supply.

C. A. Emerson, Jr., Chief Engineer, Department of Health, Commonwealth of Pennsylvania, Harrisburg.

Application of War Surgery to Industrial Practice.

Drury Hinton, M. D., Medical Supervisor, Harrison Works, E. I. du Pont de Nemours and Company, Philadelphia.

AFTERNOON SESSION.

The Proposed Health Insurance Legislation.

John B. Andrews, Ph. D., Secretary, American Association for Labor Legislation, New York.

Has the Medical Profession Adequately Met Its Responsibilities?

George E. Tucker, M. D., Aetna Life Insurance Company, Hartford, Conn.

Cost of an Adequate Medical Service Under Health Insurance.

John A. Lapp, Managing Editor, Modern Medicine, Chicago.

LEAD INSPECTIONS.

A survey of the Pennsylvania Railroad shops at Altoona and Hollidaysburg was made following the report of the incidence of a large number of cases of lead poisoning in these shops. Several cases were found and directions given for the elimination of this hazard.

The employes in a foundry, using material containing large quantities of lead and from which there had been reported numerous cases of lead poisoning, were investigated. Directions, calling for the installation of exhaust systems, were given. These directions were complied with by the company, and this hazard eliminated.

A plant engaged in the manufacture of white lead was investigated for the purpose of studying the mechanical and health hazards to which the workers were exposed, and the ways of eliminating these hazards.

GLASS SAND INSPECTIONS.

A number of glass sand plants were visited by the Chief of the Division in company with a representative of the Department of Health, with a view of inaugurating a survey in these plants in order to improve the working conditions and remove the health hazards reputed to exist in this industry.

INVESTIGATION OF SPECIAL ACCIDENTS.

Four accidents occurring in the exposives industry, in which seven men were killed and six injured were investigated. Several other accidents in explosives plants were also investigated, in which, however, no one was injured. In addition to these investigations one fatal accident, occurring in an establishment manufacturing condensed milk was investigated, which investigation resulted in the adoption of a ruling by the Industrial Board prohibiting the possession of any flame producing device in establishments manufacturing, handling or storing ether. A fatal accident in a brick-making plant and one in an iron works were also investigated by members of this Division.

In addition to the activities as noted, this Division held the Eighth and Ninth Conferences of Industrial Physicians and Surgeons; compiled and had published a directory of industrial physicians and surgeons throughout the country together with the organizations they serve; made inspection for sanitary conditions in a tannery, relative to the generation of fumes in a chain works, relative to a dust nuisance from a roll and machine shop, for mechanical and other hazards in sand and brick plants, and in chemical plants including those manufacturing coal tar products, paper, and chemicals; conducted special investigations and conferences with the supervising inspectors and the inspectors of the Department relative to the operation of the Lighting Code and presented the activities of this Department in the enforcement of this Code before sessions of the Illuminating Engineers' Society in both Chicago and New York; represented the Department at the Fifth Exposition of Chemical Industries which was held in Chicago; and represented the Department at the Seventh Annual First Aid Meet held at Boswell by the various first aid teams of the coal mining companies.